From SGranth@aol.com Mon Dec 04 15:05:29 1995
Received: from emout06.mail.aol.com (emout06.mail.aol.com [198.81.10.43]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id PAA03885; Mon, 4 Dec 1995 15:05:23 -0600 (CST)
From: SGranth@aol.com
Received: by emout06.mail.aol.com (8.6.12/8.6.12) id QAA09629; Mon, 4 Dec 1995 16:04:11 -0500
Date: Mon, 4 Dec 1995 16:04:11 -0500
Message-ID: <951204160409_44093911@emout06.mail.aol.com>
To: dbarrow@omnifest.uwm.edu, coordinator@cs.tamu.edu
cc: aprsig@tapr.org, regional_freq@tapr.org, amsat-bb@amsat.org,
        SGranth@aol.com
Subject: Re: [APRSSIG:4842] CHANGE 145.79?!

Gentlemen,

  I understand there is some, and will be more, discussion on this subject.

  Furthermore, since this issue relates to packet radio (man, am I going to catch it for this comment?..), we will probably see many 'flaming hot' messages on the subject from those who have strong feelings, and those who primarily utilize text transmission (writing) to express and vent their anger and frustration.

  We do have to realize that this is one of those issues relating to a conflict between the ARS and ASS. These terrestrial vs. space questions are going to require some coordination and communication between the interest groups representing these services.

  Though healthy commentary on these issues is certainly encouraged, I think this is an area where the (cough.. cough..) ARRL needs to exhibit it's capability to 'troubleshoot' the situation before it becomes a problem. This is where the League's SMC can, and must, become involved; in planning issues such as this.

  In the end, we should all endeavor to use reason. The use of wisdom, knowledge, and understanding is the key to the resolution of problems. We all want it now, instantly. However, It won't be quite that easy.

  First, let's have the wisdom to recognize the problem. Let's obtain the knowledge to work the problem. And, finally, let's have the understanding to implement correct and proper change to solve the problem.

  Let's all (...the SMC too!) use communication to enhance knowledge.

  More than just a tool, communication is a process!

73!
Steve Grantham, N5DWU
SERA Mississippi Director

In a message dated 95-12-03 16:55:07 EST, dbarrow@omnifest.uwm.edu (David W. Barrow III) writes:

>FORWARDED FROM: /mail/db/dbarrow(#7013) From:bruninga@nadn.navy.mil(Bob
>Bruninga)
>Well, I just finished reading the latest AMSAT journal, and it seems
>clear to me that the 145.80 frequency for future manned spacesraft is
>pretty well established WORLDWIDE.
>
>Maybe we on APRS should move down 5 KHz to 145.785.
>
>THis would give us a 15 KHz split between the users down on 145.77 and
>the space guys on 145.80. That should work fine, since 15 KHz splits
>have been shown to work just fine on the 2 meter band with modern rigs.
>
>One further advantage is that most SPACE folks should be encouraged to
>monitor 145.805 since they will first hear the spacesraft with +3 KHz
>doppler anyway. Then they can tune downward if they want to trak the pass.
>

(text deleted...)

From kn4aq.gary@mms.raleigh.nc.us Tue Dec 05 09:02:26 1995
Received: from redstone.interpath.net (root@redstone.interpath.net [199.72.1.7])
by sys1.tapr.org (8.7.2/8.7.2) with SMTP id JAA09988 for <regional_freq@tapr.org>;
Tue, 5 Dec 1995 09:02:08 -0600 (CST)
From: kn4aq.gary@mms.raleigh.nc.us
Received: from mms.raleigh.nc.us (uucp@localhost) by redstone.interpath.net
(8.6.12/8.6.14) with UUCP id HAA09824; Tue, 5 Dec 1995 07:35:33 -0500
Received: by mms.raleigh.nc.us
     id 0AM4D004 Tue, 05 Dec 95 07:33:20
Message-ID: <9512050733.0AM4D00@mms.raleigh.nc.us>
Organization: MMS Information Systems - (919)779-6674, TELNET BBS.MMS.NET
X-Mailer: TBBS/TIGER v1.0
Date: Tue, 05 Dec 95 07:33:20
Subject: APRS on 145.55?
To: coordinator@cs.tamu.edu, regional_freq@tapr.org, bruninga@nadn.navy.mil

Some thoughts on APRS' conflict with space communications:

I have not seen anything official on manned space use of 145.80, just the
echoes of it on the remailer.

Will this include the shuttle and MIR?

Will 145.55 be abandoned by the shuttle and MIR?

Could APRS move operation to 145.55 (with help from coordinators holding
off the braying pack until that channel is available)?

I don't like the proposal to move APRS down 5 kHz. The 15 kHz channel
spacing relies on considerable geographic spacing between adjacent channel
repeaters to keep signals weak and keep hash out of user's and repeater's

receivers. Typical packet use on 145.77 and 145.79 make geographic
separation of signals impossible.

That separation is needed. It's a shame to see the 15 kHz model for
repeaters held up as one to copy, because it doesn't work that well even
for it's intended, carefully crafted purpose. I have modern radios, and
when I try to copy a weaker signal with a stronger 15 kHz adjacent channel
signal, the sidebands of the adjacent signals are audible, and may
obliterate a weak enough on-channel signal.

Gary KN4AQ
VP/FC
Packet>East of NC

((
((Gary Pearce   AVID Video Editor   KN4AQ   ))
((Raleigh, NC   Franklin Video   Ham Radio   ))
((kn4aq.gary@mms.net   ))
((

From 73303.3537@compuserve.com Wed Dec 06 10:57:29 1995
Received: from dub-img-3.compuserve.com (dub-img-3.compuserve.com [198.4.9.3]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id KAA10230 for <regional_freq@tapr.org>;
Wed, 6 Dec 1995 10:57:20 -0600 (CST)
Received: by dub-img-3.compuserve.com (8.6.10/5.950515)
     id LAA13814; Wed, 6 Dec 1995 11:56:37 -0500
Date: 06 Dec 95 11:54:09 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: Bob Bruninga <bruninga@nadn.navy.mil>
Cc: Carl Bergstedt <cberg@grayfox.svs.com>,
        Digital Coordinators <regional_freq@tapr.org>,
        Frank Corsanos <fcorsanos@aol.com>, Bill Davidson <DBILL@uic.edu>,
        "Coordinator's Remailer" <coordinator@cs.tamu.edu>,
        Bob Van Valzah <BOB@grayfox.svs.com>
Subject: APRS Frequencies?
Message-ID: <951206165409_73303.3537_FHM88-1@CompuServe.COM>

Mr. Bruninga -

There has been significant discussion recently about the use of 145.79 for APRS.
Now I see in the attached message a reference to 50.62 MHz being recomended in
the APRS documentation for APRS use.

Could you please send me a list of the frequencies on all bands that you are
advocating for use by APRS? These frequencies could have significant impact on
other users of spectrum and we need to know what they are. Thank you.

73, Mark, WB9QZB
NIPRFC (Northern Illinois Packet Radio Frequency Council)
Chicago, IL

---------- Forwarded Message ----------

From:lynn4yci@music.cc.uga.edu(HOLCOMB,
GREGORY FRA)

I intend to put up a 6m station for the ms event here is my idea
so flame away. hihi
does any body out there have any problem with 50.62 Mhz as recomended
in the docs of aprs?
would it be a problem if hthe speed was only 1200 baud as this could be
done easy as pie for me and many others who have 6m radios and 1200 tncs
My station can consist of an azden 50w and a 1/4 vertical will this be e
enough power/gain for this event or am i spinning my wheels?
I have talked to a nother station who may beable to put up a 6m station
at a high site for the event as well in atlanta ga (im in athens 70 to
the north east)

if anybody can also tell me the date of the event as i have not heard
any thing about it for a week on the sig that will give me an idea if
this is do-able or worth wild
thanks Lynn n4yci at Univ of Georgia

From bruninga@nadn.navy.mil Wed Dec 06 12:08:28 1995
Received: from greatlakes.nadn.navy.mil (greatlakes.nadn.navy.mil [131.121.9.4])
by sys1.tapr.org (8.7.2/8.7.2) with SMTP id MAA00175 for <regional_freq@tapr.org>;
Wed, 6 Dec 1995 12:08:17 -0600 (CST)
Received: (from bruninga@localhost) by greatlakes.nadn.navy.mil (8.6.12/8.6.12) id
MAA08174; Wed, 6 Dec 1995 12:42:55 -0500
Date: Wed, 6 Dec 1995 12:42:53 -0500 (EST)
From: Bob Bruninga <bruninga@nadn.navy.mil>
To: "Mark J. Thompson" <73303.3537@compuserve.com>
cc: Carl Bergstedt <cberg@grayfox.svs.com>,
        Digital Coordinators <regional_freq@tapr.org>,
        Frank Corsanos <fcorsanos@aol.com>, Bill Davidson <DBILL@uic.edu>,
        "Coordinator's Remailer" <coordinator@cs.tamu.edu>,
        Bob Van Valzah <BOB@grayfox.svs.com>
Subject: Re: APRS Frequencies?
In-Reply-To: <951206165409_73303.3537_FHM88-1@CompuServe.COM>
Message-ID: <Pine.SUN.3.91.951206121718.7413B-100000@greatlakes>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Aside from 145.79 on which we sort of evolved, we suggested that everyone
begins looking for a single UHF freq as well with their local
coordinating bodies. We took a bold and controversial step in suggesting
one of the FM simplex channels 445.925. The rationale was, that GPS
mobile position reporting is going to make a profound impact on mobile
Amateur communications. Eventually, every mobile amateur radio operator
will possibly have a miniature beacon transmitter occassionally sending
out his position report. By using one common frequency, everyone within
range of that mobile will see everyone else.

    Since this is a completely mobile application and the chance of
finding a single UHF digital channel that would be available nationwide

are ZERO, we took the bold step of suggesting that allocating one FM mobile voice channel for this unique mobile application should be considered. Remember, that mobile GPS position reporting is NOT NORMAL packet, IT IS NOT MESSAGE OR DATA TRANSFER, It is a mobile communication tool that benefits VOICE users, that just happens to use short AX.25 compatible bursts. It is designed to permit MAXIMUM utilization by the MAXIMUM number of simultaneous users.

In this respect, it does NOT GROW like conventional packet networks which constantly need more and more frequencies. Also it is a sharing mode which does not permit single aligators nor other stations to hog the frequency. It should not be consdiered a threat to FM simplex, but as an AID to FM simplex mobile ans public service operations. Requesting a UHF FM simplex freqeuncy is the only possible way to have a chance of a common frequency.

Just like the calling frequency must be common nationwide, the GPS position freuqncy must be common BECAUSE MOBILES MOVE.

Today, the typical mobile position reporting device GPS/TNC/RADIO can be about the size of TWO cigarette packages if it is XTAL controlled. Using single freq XTALS for mobile operations demands a COMMON channel for this application.

OTHER FREQUENCIES:

We would like to also request TWO freqeuncies in the 6 meter digital band.

ONE FOR METEROSCATTER which works well with brief APRS packets. But is a 95% transmit key down arrangement. Such a frequency cannot be used by any other user or digital mode within the same 30 mile LOS area. Therefore it must be dedicated (again nationwide, since MScat range is typically 1000 miles)

A standard APRS freq on 6 meters. Again, the same argument for a single frequency so that single freq XTAL rigs can be used for wide roaming mobile operations.

In our area 50.62 through 50.78 are designated as 20 KHz packet channels. ALthough there was a backbone at one time on 50.62, it is defunct and since I still had the XTALS, and no-one else was on that freq. We chose that frequency for our last meteor scatter test. (This also places the high power MScatt station furthrest from the model airplane contrlllers at 50.8.

Similarly, we would choose 50.78 for the conventional APRS channel to also be furthrest from the MScattt stations...

I have been asking everyone to please bring these frequencies to the attention of their coordinating bodies, but I don't think with much success. There is a full description of these frequencies in the standard APRS README files in UHF.TXT and METEORS.txt....

I hope you also saw todays brilliant solution to the 145.80 Manned space

frequency and the 145.79 controversy.. It was distro'ed on the AMSAT and
APRS SIG's...

DE WB4APR in Annapolis MD. (Not anywhere near Greatlakes)

From 73303.3537@compuserve.com Wed Dec 06 14:26:20 1995
Received: from arl-img-4.compuserve.com (arl-img-4.compuserve.com [198.4.7.4]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id OAA05778 for <regional_freq@tapr.org>;
Wed, 6 Dec 1995 14:26:14 -0600 (CST)
Received: by arl-img-4.compuserve.com (8.6.10/5.950515)
     id PAA13015; Wed, 6 Dec 1995 15:25:42 -0500
Date: 06 Dec 95 15:21:23 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: Digital Coordinators <regional_freq@tapr.org>
Cc: Carl Bergstedt <cberg@grayfox.svs.com>, Frank Corsanos <fcorsanos@aol.com>,
        Bill Davidson <DBILL@uic.edu>, Bob Van Valzah <BOB@grayfox.svs.com>
Subject: [APRSSIG:4949] Re: 144.390????
Message-ID: <951206202122_73303.3537_FHM81-8@CompuServe.COM>

---------- Forwarded Message ----------

From: "David W. Barrow III", INTERNET:dbarrow@omnifest.uwm.edu
TO: (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/6/95 12:52 PM

RE: [APRSSIG:4949] Re: 144.390????

Sender: dbarrow@omnifest.uwm.edu
Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id NAA26115; Wed, 6 Dec 1995 13:18:59 -0500
Received: from uwm.edu (uwm.edu [129.89.6.2]) by cs.tamu.edu (8.6.10/8.6.4) with
ESMTP id MAA11803 for <coordinator@cs.tamu.edu>; Wed, 6 Dec 1995 12:17:58 -0600
Received: from omnifest.uwm.edu (omnifest.uwm.edu [129.89.70.58]) by uwm.edu
(8.7.1/8.6.9) with SMTP id MAA09581 for <coordinator@cs.tamu.edu>; Wed, 6 Dec
1995 12:18:25 -0600 (CST)
Received: by omnifest.uwm.edu; (5.65/1.1.8.2/17Sep94-0940PM)
     id AA10355; Wed, 6 Dec 1995 12:18:24 -0600
Date: Wed, 6 Dec 1995 12:18:24 -0600
From: "David W. Barrow III" <dbarrow@omnifest.uwm.edu>
Message-Id: <9512061818.AA10355@omnifest.uwm.edu>
To: coordinator@cs.tamu.edu
Subject: [APRSSIG:4949] Re: 144.390????

FORWARDED FROM: /mail/db/dbarrow(#7176) From:gyoung@ubmede.buffalo.edu(Young,
Gregory)
144.390 is in the middle of the "new Oscar subband", which will be used for
Phase 3d. once that is launched. Our regional bandplanning group did
check into the freqs anticpated for phase 3d, and 144.390 did NOT conflict.

OWNYPAG (The Ontario Western NY Packet Advisory Group) adopted the proposed
"Canadian" bandplan, for our region, as it is the best to meet the needs of
the 90's, copmared to the existing ARRL plan that is listed in our repeater
guides.. Also, as it serves all of Canada, and therefore makes for

uniformity. We had a rep. from the ARRL national Vhf/Uhf group, as well as his RAC counterpart, so the plan was not made in a vacuum! Months of thought and negotiation went into it.

The plan needed revision, it was not forthcoming from national, so we tackled it. We even made room for existing AM groups on 2 meters!! (grandfathered in, as well as FM simplex in this subband, again based on the planned up/downlinks proposed).

I need hardly point out that the freqs arbitrarily picked for shuttle communication, used at the time when the ONLY freqs available for packet, 144.91 to 145.09Mhz created some problems (and still do). Fortunately there are noe other packet subbands.

It's time for ALL to sit down and try to coordinate things a bit! The growth of digital has far exceeded the demand for repeaters, manyfold. Look at the spectrum alloted for those devices.. take a listen to the activity on those, or should I say lack of activity..

73, Greg, KE2VW
Chairman, OWNYPAG (Ontario Western NY Packet Advisory Group)
Chairman, WNYSORC (Western NY Southern Ontario Repeater Council)

-----FORWARDER'S COMMENTS:
Fellow FCs
        If WE do not address this soon it will get completely out of hand!

        Can we ask (O so politely, of course) that the ARRL stay OUT of this one and let the FCs handle it?

        I BEG of you - can we get a committee together and get some FAST action?

        May I respectfully suggest that we get well qualifies people from the MAJOR coordination bodies and let them solve this problem. I suggest SERA, MACC, T-mark, SCRBA.

73 de Dave

David W. Barrow III, N9UNR
Wisconsin Association of Repeaters - Frequency Coordinator
Snail: 1894 Elm Drive - Town of Cedarburg
           West Bend, WI 53095-9603
Phone: (414) 375-2667
Packet: N9UNR @ N9PBY.EF63BI.WI.USA.NOAM
Internet: n9unr@execpc.com (PREFERRED)
           OR dbarrow@omnifest.uwm.edu

From 73303.3537@compuserve.com Wed Dec 06 14:26:23 1995

Received: from arl-img-4.compuserve.com (arl-img-4.compuserve.com [198.4.7.4]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id OAA05784 for <regional_freq@tapr.org>;
Wed, 6 Dec 1995 14:26:20 -0600 (CST)
Received: by arl-img-4.compuserve.com (8.6.10/5.950515)
     id PAA12871; Wed, 6 Dec 1995 15:25:20 -0500
Date: 06 Dec 95 15:15:55 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: APRS Information Needed
Message-ID: <951206201554_73303.3537_FHM81-4@CompuServe.COM>

---------- Forwarded Message ----------

From: Chris Petersen, INTERNET:102261.1225@compuserve.com
TO: "Coordinator's Remailer", INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/6/95 12:53 PM

RE: APRS Information Needed

Sender: 102261.1225@compuserve.com
Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id NAA07002; Wed, 6 Dec 1995 13:51:39 -0500
Received: from arl-img-6.compuserve.com (arl-img-6.compuserve.com [198.4.7.6])
by cs.tamu.edu (8.6.10/8.6.4) with ESMTP id MAA12775 for
<coordinator@cs.tamu.edu>; Wed, 6 Dec 1995 12:50:51 -0600
Received: by arl-img-6.compuserve.com (8.6.10/5.950515)
     id NAA06719; Wed, 6 Dec 1995 13:50:53 -0500
Date: 06 Dec 95 13:49:08 EST
From: Chris Petersen <102261.1225@compuserve.com>
To: "Coordinator's Remailer" <coordinator@cs.tamu.edu>
Subject: APRS Information Needed
Message-ID: <951206184908_102261.1225_BHB127-2@CompuServe.COM>

I'd like some information regarding APRS to help me better understand the 145.79
issue better.

How is APRS used? How much data is sent in a packet? Who is sending the
packets? Base, mobile? What percentage of channel availability is expected to
be used? Is this channel to be used for DGPS services? If so, how many DGPS
servers do you need in a given coverage area? Why can't APRS share existing
packet frequencies? Does APRS need the exclusive use of a frequency and why?
Why does APRS need a nation-wide frequency?

Pointers to sources of information on APRS, (Web sites, FTP sites, etc.) would
be appreciated.

Thanks in advance,
Chris Peterse, KF0FX@aol.com
Vice Chairman, Minnesota Repeater Council

From 73303.3537@compuserve.com Wed Dec 06 16:08:57 1995
Received: from dub-img-5.compuserve.com (dub-img-5.compuserve.com [198.4.9.5]) by

sys1.tapr.org (8.7.2/8.7.2) with SMTP id QAA09679 for <regional_freq@tapr.org>;
Wed, 6 Dec 1995 16:08:48 -0600 (CST)
Received: by dub-img-5.compuserve.com (8.6.10/5.950515)
     id PAA07229; Wed, 6 Dec 1995 15:59:59 -0500
Date: 06 Dec 95 15:54:05 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: APRS frequencies
Message-ID: <951206205404_73303.3537_FHM27-1@CompuServe.COM>

---------- Forwarded Message ----------

From: "WERNER.W.F-", INTERNET:WERNER.W.F-_at_BALT.PO.017@smtpgty.bwi.wec.com
TO: (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/6/95 2:42 PM

RE: APRS frequencies

Sender: werner.w.f-_at_balt.po.017@smtpgty.bwi.wec.com
Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id PAA03891; Wed, 6 Dec 1995 15:31:50 -0500
Received: from tron.bwi.wec.com (tron.bwi.wec.com [129.228.4.1]) by cs.tamu.edu
(8.6.10/8.6.4) with SMTP id OAA16179 for <coordinator@cs.tamu.edu>; Wed, 6 Dec
1995 14:29:00 -0600
Received: from smtpgty.bwi.wec.com by tron.bwi.wec.com;
(5.65/1.1.8.2/31May95-0229PM)
     id AA17227; Wed, 6 Dec 1995 15:25:57 -0500
Received: from ccMail by smtpgty.bwi.wec.com (SMTPLINK V2.10.08)
     id AA818293162; Wed, 06 Dec 95 15:32:00 EST
Date: Wed, 06 Dec 95 15:32:00 EST
From: "WERNER.W.F-" <WERNER.W.F-_at_BALT.PO.017@smtpgty.bwi.wec.com>
Message-Id: <9511068182.AA818293162@smtpgty.bwi.wec.com>
To: coordinator@cs.tamu.edu
Subject: APRS frequencies

W4APR, Bob Bruninga, is in the TMARC coordination area and we are
attempting to work with him and others concerning spectrum for APRS and
other digital activities. However, there is always a problem with timing
as requests such as this take considerable time to work out within our
area, adjacent areas, and in this case, apparently the world. It seems
that packet, by its very nature, does not have an abundance of time, and
when our efforts come to fruition, the need has already passes or become
established without us. Perhaps the new world order (a standing SPOC
committee) will come to our rescue. Until then, we will putter along.

Speaking for myself only, and with Bob's enthusiasm aside, I do not think
APRS will become an adjunct to mobile voice operation and placing it on a
voice simplex channel is a bad idea. I do not think Bob will police the
activity to keep it from spreading to adjacent channels (and quite possibly
into the channels with coordinated aux links). As to everyone wanting to
be on the same channel, this is the sort of thing we heard in the early
days of packet until the DX clusters came along. Personally, I can think
of several uses of APRS where I would like a clear channel, not shared by

others. I think digital modes should be grouped together, out of the sub-bands required by repeaters, and especially away from aux links. Since it appears that special radios are required for digital modes (other than 1200 baud) I feel it is a good time to get packet away from voice users, simplex and repeater, and place them in their own part of the band where possible. By the way does anyone know how much activity is on the new 219 mHz digital only band?

73,
Bill W3EAO   TMARC

From 73303.3537@compuserve.com Wed Dec 06 16:19:59 1995
Received: from dub-img-6.compuserve.com (dub-img-6.compuserve.com [198.4.9.6]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id QAA10144 for <regional_freq@tapr.org>; Wed, 6 Dec 1995 16:19:53 -0600 (CST)
Received: by dub-img-6.compuserve.com (8.6.10/5.950515)
     id RAA17808; Wed, 6 Dec 1995 17:19:19 -0500
Date: 06 Dec 95 17:15:57 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: APRS Information Needed (Answers)
Message-ID: <951206221557_73303.3537_FHM37-1@CompuServe.COM>

---------- Forwarded Message ----------

From: Bob Bruninga, INTERNET:bruninga@nadn.navy.mil
TO: Mark J. Thompson, 73303,3537
CC: (unknown), INTERNET:INTERNET:@GREATLAKES.NADN.NAVY.MIL
     (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU;
     (unknown), INTERNET:APRSSIG@TAPR.ORG
DATE: 12/6/95 3:18 PM

RE: APRS Information Needed (Answers)

Sender: bruninga@nadn.navy.mil
Received: from greatlakes.nadn.navy.mil by dub-img-4.compuserve.com (8.6.10/5.950515)
     id QAA03460; Wed, 6 Dec 1995 16:11:15 -0500
Received: (from bruninga@localhost) by greatlakes.nadn.navy.mil (8.6.12/8.6.12) id QAA14781; Wed, 6 Dec 1995 16:11:29 -0500
Date: Wed, 6 Dec 1995 16:11:28 -0500 (EST)
From: Bob Bruninga <bruninga@nadn.navy.mil>
To: 73303.3537@compuserve.com
cc: INTERNET:@greatlakes.nadn.navy.mil, COORDINATOR@CS.TAMU.EDU;,
        aprssig@tapr.org
Subject: APRS Information Needed (Answers)
Message-ID: <Pine.SUN.3.91.951206153851.13638F-100000@greatlakes>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

FOLLOWING REPLYS ARE CAPATIALIZED FOR RECOGNITION.

> Chris Petersen, INTERNET:102261.1225@compuserve.com ASKED:

> I'd like some information regarding APRS to help me better understand the
> 145.79 issue better.

> How is APRS used?
ITS A CONNECTIONLESS DSITRIBUTED PACKET SYSTEM WHICH USES UI PACKETS
WITHOUT ACKS SO THAT EVERYONE SEES EVERYONE. THE PRIMARY FUNCTION IS THE
MAP DISPLAY WHICH SHOWS THE POSITION OF ALL STATIONS MOBILE AND FIXED,
AND ALSO ANY NUMBER OF SYMBOLS OR OBJECTS REPRESENTING ANYTHING FROM
RUNNERS, AMBULANCES, FIRETRUCKS, TORNADOS, RAIN, BOATS, SATELLITES...

> How much data is sent in a packet?
ONE LINE ONLY. CONTAINS DATE,TIME,POSITION,AND STATUS

> Who is sending the packets?
EVERYONE WHO HAS INFO TO SEND

> Base, mobile?
BOTH, MOSTLY BASE, NOW, BUT MOBILES ARE GROWING

> What percentage of channel availability is expected to be used?
THE OPTIMUM LOADING IS EXPECTED TO BE SOMEWHAT LESS THAN CSMA 36%
  * NOTE THAT NO SINGLE USER HOGS THE CHANNEL FOR ANY LENGTH
  * THE MAXIMUM PACKET RATE FROM THE MOST BUSY ACTIVE STATION IS
    ABOUT ONE PACKET EVERY 15 SECONDS, BUT THIS PERIOD *DOUBLES*
    AFTER EVERY PACEKT, SINCE OLD NEWS IS LESS VALUABLE
    SO IT WOULD NEED TO BE A BUSY SET OF FINGERS THAT COULD LOAD
   THE CHANNEL MORE THAN ABOUT 10%

> Is this channel to be used for DGPS services? If so, how many DGPS
servers do you need in a given coverage area?
YES/NO. WE TRIED IT, IT WORKS, BUT YOU NEED TO SEND DGPS PACEKTS EVERY
30 SECONDS OR SO TO BE OF ANY VALUE, AND THIS TAKES UP 30% OF THE CHANNEL
CAPACITY! BEST SOLUTION FOR DGPS IS TO USE A DIFFERENT CHANNEL
TRANSMITTING DGPS DATA ALMOST CONSTANTLY. NO NEED FOR THIS ON 2 METERS!
NO NEED FOR DGPS IN APRS EITHER. *WE DONT NEED THAT ACCURACY* FOR TYPICAL
PUBLIC SERVICE EVENTS.

> Why can't APRS share existing packet frequencies?
ONLY ONE REASON. THE MASSES THINK *UI* MEANS *BEACON* WHICH IS A
FORBIDDEN WORD ON ALMOST *ALL* PACKET NETWORKS... BUT AN APRS UI FRAME
CONVEYS NEW AND CHANGING INFORMATION AND ELIMINATES ACKS... EVERY
PERMANENT PACKET SITE, BBS, NODE, WHATEVER, SHOULD SEND AN APRS POSIT/ID
AT LEAST ONCE AN HOUR SO THAT EVERYONE CAN SEE THE NETWORK TOPOLOGY JUST
BY MONITORING A FREQUENCY. MONITOR SUCH A NETWORK FOR AN HOUR AND YOU
WILL BE AMAZED AT ALL THE DEVICES AND SERVICES ARE ON THAT FREQUENCY.
APRS ID/POSIT BEACONS ARE AN *IDEAL* FERQUENCY COORDINATORS TOOL

> Does APRS need the exclusive use of a frequency and why?
*YES. THE ESTABLISHED APRS NET IS FOR TRACKING MOBILES. MOBILES TRAVEL.
MOBILES CANT POSSIBLY KEEP UP WITH ALL THE PATHS AND FREQEUNCIES AND
LINKS OF EXSTING NETWORKS. ALSO THE GPS/TNC/RADIO TRACKING DEVICES ARE

SINGLE FUNCTION BOXES. SINGEL FERQUENCY XTAL CONTROL IS THE ONLY COST
EFFECTIVE MECHANISM FOR OUTFITTING MOBILES.
* ALTHOUGH APRS SHARES A CHANNEL WELL AS A SOURCE OF DATA, IT DOES NOT
LIKE TO SEE THE CHANNEL HOGGED FOR CONNECTED DATA TRANSFERS THAT TIE UP
THE CHANNEL FOR LONG DURATION. ANY LONG DURATION USE LIKE THAT WOULD
KILL LOTS OF UI FRAMES AND DATA WOULD BE LOST...

> Why does APRS need a nation-wide frequency?
OOPS, SAME AS ABOVE.. SO MOBILES OR EMERGENCY RESPONSE TEAMS CAN MOVE
FROM AREA TO AREA TRANSPARENTLY. WE CAN TRAK AN AUTO FROM MAINE TO NORTH
CAROLINA (ALMOST) AND FROM GA TO MS. THE AUTO NEVER NEEDS TO STOP, TO
CHANGE FREQS, OR TO LOOK UP REPEATER CALLSIGNS, HE JUST DRIVES...

> Pointers to sources of information on APRS, (Web sites, FTP sites, etc.)
> would be appreciated.

INCLUDED WITH ALL COPIES OF APRS IS A README DIRECTORY. LOOK IN THERE
FOR THE FOLLOWING FILES:
APRS.DOC
OPS.TXT
UHF-FREQ.TXT
DIGIS.TXT
PROTOCOL.TXT

HOPE THIS HELPS...

From 73303.3537@compuserve.com Thu Dec 07 11:45:16 1995
Received: from arl-img-4.compuserve.com (arl-img-4.compuserve.com [198.4.7.4]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id LAA21848 for <regional_freq@tapr.org>;
Thu, 7 Dec 1995 11:45:13 -0600 (CST)
Received: by arl-img-4.compuserve.com (8.6.10/5.950515)
     id MAA27106; Thu, 7 Dec 1995 12:44:32 -0500
Date: 07 Dec 95 12:41:48 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: Carl Bergstedt <cberg@grayfox.svs.com>,
        Digital Coordinators <regional_freq@tapr.org>,
        Frank Corsanos <fcorsanos@aol.com>, Bill Davidson <DBILL@uic.edu>,
        "GREGORY A. MELZER" <75777.675@compuserve.com>,
        Paul Moller <WPM002@email.mot.com>,
        Paul Moller <Paul_Moller@csg.mot.com>,
        Bob Van Valzah <BOB@grayfox.svs.com>
Subject: APRS on 445.925
Message-ID: <951207174147_73303.3537_FHM59-6@CompuServe.COM>

---------- Forwarded Message ----------

From: Bob Wilkins n6fri, INTERNET:rwilkins@uhf.org
TO: Coordinators Remailer, INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/6/95 7:07 PM

RE: APRS on 445.925

Sender: rwilkins@ccnet3.ccnet.com

Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id TAA02811; Wed, 6 Dec 1995 19:35:52 -0500
Received: from ccnet3.ccnet.com (root@ccnet3.ccnet.com [192.215.96.11]) by
cs.tamu.edu (8.6.10/8.6.4) with ESMTP id SAA24714 for <coordinator@cs.tamu.edu>;
Wed, 6 Dec 1995 18:34:48 -0600
Received: (from rwilkins@localhost) by ccnet3.ccnet.com (8.6.12/8.6.12) id
QAA24923; Wed, 6 Dec 1995 16:28:23 -0800
Date: Wed, 6 Dec 1995 16:28:23 -0800 (PST)
From: Bob Wilkins n6fri <rwilkins@uhf.org>
X-Sender: rwilkins@ccnet3
To: Coordinators Remailer <coordinator@cs.tamu.edu>
Subject: APRS on 445.925
Message-ID: <Pine.SUN.3.91.951206151928.17295A-100000@ccnet3>
X-URL: http://www.ccnet.com/~rwilkins/
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

This is one of many text files found in the dos APRS readme directory.
==========

UHF-FREQ.txt 6.0   A NATIONWIDE UHF 9600 BAUD GPS TRACKING FREQUENCY

                        ?????? 445.925 ??????

With GPS ever decreasing in price, the time is approaching when EVERY car in America, or at least every car with a two-way radio system will have GPS in some form or another. Amateurs will find that transmitting their position while mobile, adds a new dimension to radio and facilitates amateur response to emergencies as well as providing for just plain fun.

Since GPS position reporting is a predominantly mobile operation, most HAMs will eventually dedicate a single transceiver for single function operation on a single tracking frequency. Today (1994), 1 watt commercial, single frequency UHF data transceivers capable of up to 9600 baud are available for around $100. This is approximately one-third the cost of a typical mobile HAM transceiver or walkie-talkie. Using these transceivers, a nation wide GPS reporting and tracking frequency could develop very quickly.

Unfortunately, however, a nationwide tracking capabilty using single frequency crystal controlled transceivers, cannot develop unless there is a SINGLE NATIONWIDE UHF FREQUENCY dedicated to this application. Since mobiles by their very nature, wander everywhere, the evolution of different GPS networks on different frequencies in different areas will permanently encumber the growth of this fascinating new aspect of amateur radio. The success of GPS tracking on the two-meter band has been nothing short of amazing, since everyone from the beginning seemed to cluster on the ARRL established experimental frequency of 145.79. Mobiles beaconing their position on that frequency could be assured of tracking networks almost anywhere they traveled. But as more and more stations go GPS packet mobile, there is the need to move to 9600 baud to avoid gridlock.

To date, I have not been able to find an innexpensive 9600 baud data

radio for the two meter band, while several models exist for the UHF band. It is time to move to UHF! See ad on page 18 Feb 94 QST for the TEKK radios: T-NET MINI $119.90 and T-NET MICRO $99.90 both are 2 watt UHF modules about the size of a credit card that operate to 9600 baud! Call them at 1-800-521-8355. Paccomm builds these into some TNC enclosures for complete BLACK-BOX TNC/RADIOS...

FINDING A FREQUENCY!

As anyone that has participated in a frequency coordinating organization can attest, finding an available packet frequency in our already crowded bands is a difficult and painful process. Trying to find a single national frequency will be virtually impossible! As a weak-signal operator, and ATV'er, I do not want to see any more encroachment on the 70 CM ATV frequencies and certainly not on the the weak signal bands. Also, as a member of the local Mid-Atlantic Repeater council, I have avidly defended the UHF FM voice frequencies from encroachment by packet operations.

After a lot of thought, however, I do believe that a single frequency is available and should be proposed for nationwide discussion. Amateurs have always been at the leading edge of new technology, and have usually been able to accommodate new ideas when it seems to serve their general interest, and their capabilities as a community communications resource.

As stated before, GPS tracking is a SINGLE FUNCTION, SINGLE FREQUENCY application. Once a single frequency is identified, there is no reason and little incentive for any further frequency spreading of this application. BBS's and packet data networks, for example, are HUB or star based networks which operate most effectively when each major NODE or BBS has its own separate frequency. Due to the community nature of these beasts, there is always a crowding effect driving the users to find more and more frequencies. The GPS reporting and tracking network, however, gains its advantage by having ALL mobile stations on one and only one frequency. Just as HAMS have 146.52 as a national calling frequency, and CB'ers have channel 19, the GPS application needs only a single frequency everywhere.

Maybe it is time to allocate a single FM simplex channel to high speed GPS position reporting and tracking. Just as 446.00 is recognized as the UHF calling frequency, there should be a comparable 445.xxx GPS status and tracking frequency for mobiles nationwide. I anguished long and hard over this proposal, and I suspect that it will meet with a lot of emotional and idealogic controversy. But I think that anyone that is watching the trends in communications technology will certainly conclude that GPS position reporting of mobile radio operations WILL BE FUNDAMENTAL IN EVERY MOBILE NETWORK within 10 years. We either bite-the-bullet now and plan for the orderly development of GPS applications on the 70 cm band, or we will be fighting this same battle for the next ten years.

If you have any comments on this idea, or can see a better way, please contact your local frequency coordinating council. If there is any precedence anywhere for a single DATA channel in the FM simplex band, please let me know ASAP! Otherwise, HOW ABOUT 445.925 MHz ??????????????????????

I just can't get over the excitement, of someday, being able to glance at your dash-board mounted full color map display and seeing the location of every mobile HAM within 30 miles! Setting aside a single GPS status and position reporting frequency NOW, will make this happen!

==========

This is one of the many txt files found in the APRS readme directory.

The frequency may be used as a digital frequency in the north east. West of the Mississippi this frequency is coordinated to auxiliary links and repeater inputs or outputs. In northern California this is the input to several coordinated repeaters as well as an auxiliary system.

My recommendation is to work toward finding a suitable digital frequency in the 430 MHz digital sub-bands. The 440 - 450 sub-band is a voice repeater sub-band in the same major metropolitan areas that APRS needs a 9600 uhf frequency. Lets look at the long term effects on planning as ATV moves to higher bands. As the 439 ATV moves up I am sure there will be a move to coordinate more repeater services in the 440 - 442 and 445 - 447 area...

Many of the cheapie chirpie radios work better in the 430+ band as their front ends do not have to overcome the desence of the voice repeaters and mobile users on 440+ frequencies.

Bob n6fri FC NARCC 420 and above

Bob Wilkins home n6fri@uhf.org
Berkeley, California work bwilkins@cave.org
94712-2354 play n6fri@n6eeg.#nocal.ca.usa.noam

Please trim to the essentials when you reply..... Thanks

From 73303.3537@compuserve.com Thu Dec 07 11:45:32 1995
Received: from dub-img-2.compuserve.com (dub-img-2.compuserve.com [198.4.9.2]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id LAA21865 for <regional_freq@tapr.org>; Thu, 7 Dec 1995 11:45:25 -0600 (CST)
Received: by dub-img-2.compuserve.com (8.6.10/5.950515)
id MAA24151; Thu, 7 Dec 1995 12:44:46 -0500
Date: 07 Dec 95 12:40:56 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: Carl Bergstedt <cberg@grayfox.svs.com>,
Digital Coordinators <regional_freq@tapr.org>,
Frank Corsanos <fcorsanos@aol.com>, Bill Davidson <DBILL@uic.edu>,
Bob Van Valzah <BOB@grayfox.svs.com>
Subject: Re: Packet, APRS, Deviation, etc.
Message-ID: <951207174055_73303.3537_FHM59-1@CompuServe.COM>

---------- Forwarded Message ----------

From: INTERNET:WhitBrown@aol.com, INTERNET:WhitBrown@aol.com
TO: (unknown), INTERNET:MEDCALF@IDIR.NET
     (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/6/95 11:24 PM

RE: Re: Packet, APRS, Deviation, etc.

Sender: whitbrown@aol.com
Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id AAA25470; Thu, 7 Dec 1995 00:23:53 -0500
From: <WhitBrown@aol.com>
Received: from emout05.mail.aol.com (emout05.mail.aol.com [198.81.10.37]) by
cs.tamu.edu (8.6.10/8.6.4) with ESMTP id XAA00587 for <coordinator@cs.tamu.edu>;
Wed, 6 Dec 1995 23:22:57 -0600
Received: by emout05.mail.aol.com (8.6.12/8.6.12) id AAA01918; Thu, 7 Dec 1995
00:22:59 -0500
Date: Thu, 7 Dec 1995 00:22:59 -0500
Message-ID: <951207002256_66105236@emout05.mail.aol.com>
To: medcalf@idir.net, coordinator@cs.tamu.edu
Subject: Re: Packet, APRS, Deviation, etc.

In a message dated 95-12-05 20:49:33 EST, medcalf@idir.net (Karl Medcalf
(WK5M)) writes:

>
>At 06:58 PM 12/5/95 -0500, Whit Brown wrote:
>>> I attribute most of this to bad IDC settings on the rigs themselves that
>>the users also use for voice. Equally guilty is the irresponsible set-up
>>instructions with some TNC's whereas the user is instructed to increase the
>>TNC's 1200 Hz injection to the rig "until a nearby receiver/scanner is no
>>longer able to hear it, then reduce the injection until the tone just
>>reappears."...I love it!
>>

You know Karl, I can think of an excellant, inexpensive way to set injection
level to the rig/s to set the deviation where it should be and you wouldn't
need a service monitor to do so.

   Why not use Bessell null functions? If my math is close the 1200 Hz tone
you already have should produce a first null at 2.89 kHz which should be a
good workable value. If you wanted to get fancy you could integrate any of
the following tones into the TNC for set up purposes.

Desired Deviation kHz	1st Null	2nd Null	3rd Null
2.00	831.67	362.23	231.13
2.50	1039.59	452.79	288.91
3.00	1247.50	543.35	346.69
3.50	1455.42	633.91	404.47
4.00	1663.34	724.47	462.25
4.50	1871.26	815.03	520.03
5.00	2079.17	905.58	577.81

	Deviation Produced (kHz)		
Tone	1st Null	2nd Null	3rd Null
697	1.68	3.85	6.03
770	1.85	4.25	6.66
852	2.05	4.70	7.37
941	2.26	5.20	8.14
1000	2.40	5.52	8.65
1200	2.89	6.63	10.38
1209	2.91	6.68	10.46
1336	3.21	7.38	11.56
1477	3.55	8.15	12.78
1633	3.93	9.02	14.13
2000	4.81	11.04	17.31
2200	5.29	12.15	19.04

I just cranked these out on a spreadsheet, you might want to check them. Why don't you use what influence you have with Kantronics and get them to consider it? Hopefully the others might hop on board. If they use it I wouldn't expect any royalties, hi. Just cleaner bands would be payment enough.

Happy Holidays and 73, Whit

From SGranth@aol.com Thu Dec 07 19:58:26 1995
Received: from mail02.mail.aol.com (mail02.mail.aol.com [152.163.172.66]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id TAA10758 for <regional_freq@tapr.org>; Thu, 7 Dec 1995 19:58:23 -0600 (CST)
From: SGranth@aol.com
Received: by mail02.mail.aol.com (8.6.12/8.6.12) id UAA11376; Thu, 7 Dec 1995 20:56:37 -0500
Date: Thu, 7 Dec 1995 20:56:37 -0500
Message-ID: <951207170853_127645020@mail02.mail.aol.com>
To: bruninga@nadn.navy.mil, 73303.3537@compuserve.com
cc: cberg@grayfox.svs.com, regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu, coordinator@cs.tamu.edu, BOB@grayfox.svs.com, SGranth@aol.com
Subject: Re: APRS Frequencies? (70cm proposal...)

Bob,

  In the SERA 70cm Frequency Utilization Plan, 445.925 MHz is a voice simplex channel. I suggest you look at 440.925, or on of the digital frequencies from 440.9125 to 441.1750 MHz (in 12.5 kc steps, Note *1).

  If the mobile transmit frequency has to be near 445 MHz, I suggest you look at one of the digital repeater pairs (say... 445.725 (mobile) / 440.725 (base)...). These digital pairs occupy spectrum from 440.5125 to 440.7250 MHz (paired with +5.0 MHz inputs). These pairs, however, need to be coordinated for use on a site-by-site basis.

  In my opinion, the use of paired frequencies for your 70cm mobile APRS beacon operations would seem to enhance user mobile operations by keeping the

APRS receive frequencies somewhat removed from the higher frequency mobile voice transmit frequencies. (I guess these 70cm APRS stations would be linked to the 2m APRS network??)

  Though I'm not 'totally' learned about the mission, usage, and operations of APRS, I think this suggestion will help you understand what's going on in other parts of the country.

Regards,
Steve Grantham, N5DWU
SERA-MS Director

Note *1: The 12.5 kHz steps have been 'under attack' for being too narrow for 9600 bps operations. Channels coordinated for 9600 bps use would, like other coordinated channels, be coordinated with adjacent channel use considered. The listing of 12.5 kc channels was intended to preclude homesteading of unidentified channels by users of conflicting modes of operation.

P.S. If you would like, I can send you a text file (a message with attachment) listing the SERA 70cm FUP.

(SERA represents VHF/UHF coordinating interests throughout GA, KY, MS, NC, SC, TN, VA, and WV.)

In a message dated 95-12-06 13:00:40 EST, bruninga@nadn.navy.mil (Bob Bruninga) writes:

> We took a bold and controversial step in suggesting
>one of the FM simplex channels 445.925. The rationale was, that GPS
>mobile position reporting is going to make a profound impact on mobile
>Amateur communications. Eventually, every mobile amateur radio operator
>will possibly have a miniature beacon transmitter occassionally sending
>out his position report. By using one common frequency, everyone within
>range of that mobile will see everyone else.
>
>

From SGranth@aol.com Thu Dec 07 23:03:15 1995
Received: from mail02.mail.aol.com (mail02.mail.aol.com [152.163.172.66]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id XAA17217 for <regional_freq@tapr.org>; Thu, 7 Dec 1995 23:03:11 -0600 (CST)
From: SGranth@aol.com
Received: by mail02.mail.aol.com (8.6.12/8.6.12) id AAA23083; Fri, 8 Dec 1995 00:00:54 -0500
Date: Fri, 8 Dec 1995 00:00:54 -0500
Message-ID: <951207213657_47779296@mail02.mail.aol.com>
To: bruninga@nadn.navy.mil, 73303.3537@compuserve.com
cc: cberg@grayfox.svs.com, regional_freq@tapr.org, FCorsanos@aol.com,
        DBILL@uic.edu, coordinator@cs.tamu.edu, BOB@grayfox.svs.com,
        SGranth@aol.com
Subject: Re: APRS Frequencies? (selection in a vacuum??)

In a message dated 95-12-06 13:00:40 EST, bruninga@nadn.navy.mil (Bob Bruninga) writes:

>   Since this is a completely mobile application and the chance of
>finding a single UHF digital channel that would be available nationwide
>are ZERO, we took the bold step of suggesting that allocating one FM
>mobile voice channel for this unique mobile application should be
>considered.

  Though I see that you have made queries about 6m frequencies, and I encourage that, I wonder if, and why, previous frequency selections were apparently made in a vacuum?

>   Remember, that mobile GPS position reporting is NOT NORMAL
>packet, IT IS NOT MESSAGE OR DATA TRANSFER, It is a mobile
>communication tool that benefits VOICE users, that just happens to
>use short AX.25 compatible bursts. It is designed to permit MAXIMUM
>utilization by the MAXIMUM number of simultaneous users.

  Here we go again... It's the 'us vs. them' thing again.

  Also, "short AX.25 compatible bursts" leads us to beleive it's compatible with voice. Then, "MAXIMUM utilization by... MAXIMUM... users" leads us to the conclusion that it will expand into a MAXIMUM duty cycle by these digital transmissions.

  Let's talk about this thing some... before we run off in left field looking for foul balls.

Steve Grantham, N5DWU
SERA-MS Director

  'More than just a tool, communication is a process!'

From SGranth@aol.com Fri Dec 08 00:05:35 1995
Received: from emout06.mail.aol.com (emout06.mail.aol.com [198.81.10.43]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id AAA22126 for <regional_freq@tapr.org>; Fri, 8 Dec 1995 00:05:30 -0600 (CST)
From: SGranth@aol.com
Received: by emout06.mail.aol.com (8.6.12/8.6.12) id BAA08683; Fri, 8 Dec 1995 01:03:31 -0500
Date: Fri, 8 Dec 1995 01:03:31 -0500
Message-ID: <951207213704_47779021@emout06.mail.aol.com>
To: bruninga@nadn.navy.mil, 73303.3537@compuserve.com
cc: cberg@grayfox.svs.com, regional_freq@tapr.org, FCorsanos@aol.com,
        DBILL@uic.edu, coordinator@cs.tamu.edu, BOB@grayfox.svs.com,
        SGranth@aol.com
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)

In a message dated 95-12-06 13:00:40 EST, bruninga@nadn.navy.mil (Bob Bruninga) writes:

> By using one common frequency, everyone within
>range of that mobile will see everyone else.

  By using a split frequency, the base might employ a 'kiss' repeat mode, listening for, and repeating any mobile's transmisions (non-selectively) from the input frequency. This would allow any mobile in range of the base to see any other mobile's position.

  Further, if the base was full duplex, the repeats could be 'real-time', preventing the 'hidden terminal syndrome'.

Steve Grantham, N5DWU
SERA-MS Director

From gerry@cs.tamu.edu Fri Dec 08 08:26:02 1995
Received: from cs.tamu.edu (clavin.cs.tamu.edu [128.194.130.106]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id IAA06723 for <regional_freq@tapr.org>; Fri, 8 Dec 1995 08:24:45 -0600 (CST)
Received: from solar.cs.tamu.edu (2961@solar.cs.tamu.edu [128.194.132.1]) by cs.tamu.edu (8.6.10/8.6.4) with ESMTP id IAA08061; Fri, 8 Dec 1995 08:06:02 -0600
From: Gerald J Creager <gerry@cs.tamu.edu>
Received: (gerry@localhost) by solar.cs.tamu.edu (8.6.10/8.6.4) id IAA08734; Fri, 8 Dec 1995 08:05:56 -0600
Message-Id: <199512081405.IAA08734@solar.cs.tamu.edu>
Subject: Re: APRS Frequencies? (selection in a vacuum??)
To: SGranth@aol.com
Date: Fri, 8 Dec 1995 08:05:56 -0600 (CST)
Cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
        coordinator@cs.tamu.edu, BOB@grayfox.svs.com
In-Reply-To: <951207213657_47779296@mail02.mail.aol.com> from "SGranth@aol.com" at Dec 8, 95 00:00:54 am
X-Mailer: ELM [version 2.4 PL24]
Content-Type: text

Unlike "normal" packet, APRS data bursts are pretty well limited to what's needed. The worst case mobiles send a NMEA ascii string of 40-60 characters (roughly) while the bases send a somewhat shorter (usually) burst of APRS-specific data. You don't see someone doing a "dir" of a BBS for the last 25k message headers.

Further, unlike "normal" packet operations, where the user has optimized his TNC parameters to provide himself with the maximum benefit, APRS optimizes the base station parameters for channel usage... sort of an opti-min solution. While the mobiles are not similarly controlled, the human tendency to report your position every 15 seconds is diminished after a couple of days of coming home and noting that yours is the ONLY car reporting like that, and yours is filling up the log on your hard disk all the time, while other folks are just visible!

73, gerry
--
Gerry Creager N5JXS   * SAREX Co-Investigator
gerry@cs.tamu.edu   *   A little radio that lets kids talk

                                        *   to astronauts, and smile
****

From gerry@cs.tamu.edu Fri Dec 08 08:38:45 1995
Received: from cs.tamu.edu (clavin.cs.tamu.edu [128.194.130.106]) by sys1.tapr.org
(8.7.2/8.7.2) with SMTP id IAA07239 for <regional_freq@tapr.org>; Fri, 8 Dec 1995
08:37:26 -0600 (CST)
Received: from solar.cs.tamu.edu (2961@solar.cs.tamu.edu [128.194.132.1]) by
cs.tamu.edu (8.6.10/8.6.4) with ESMTP id IAA08302; Fri, 8 Dec 1995 08:22:12 -0600
From: Gerald J Creager <gerry@cs.tamu.edu>
Received: (gerry@localhost) by solar.cs.tamu.edu (8.6.10/8.6.4) id IAA08934; Fri,
8 Dec 1995 08:22:06 -0600
Message-Id: <199512081422.IAA08934@solar.cs.tamu.edu>
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)
To: SGranth@aol.com
Date: Fri, 8 Dec 1995 08:22:05 -0600 (CST)
Cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
        coordinator@cs.tamu.edu, BOB@grayfox.svs.com
In-Reply-To: <951207213704_47779021@emout06.mail.aol.com> from "SGranth@aol.com"
at Dec 8, 95 01:03:31 am
X-Mailer: ELM [version 2.4 PL24]
Content-Type: text

SGranth@aol.com sez:
>
> In a message dated 95-12-06 13:00:40 EST, bruninga@nadn.navy.mil (Bob
> Bruninga) writes:
>
> > By using one common frequency, everyone within
> >range of that mobile will see everyone else.
>
>   By using a split frequency, the base might employ a 'kiss' repeat mode,
> listening for, and repeating any mobile's transmisions (non-selectively) from
> the input frequency. This would allow any mobile in range of the base to see
> any other mobile's position.
>
>   Further, if the base was full duplex, the repeats could be 'real-time',
> preventing the 'hidden terminal syndrome'.

An interesting solution. And one that the dedicated packet types have been
trying to implement for a while, although they've been hampered by the old saw
that packet could "repeat" ona single channel.

on a first note: Bob's got a novel solution on the distribution of mobile
reports, that actually works on a dedicated channel: Use of common digipeater
names, WIDE and RELAY. The default is RELAY on the base when it comes up. The
recommendation for WIDE use is if you are omni and truly able to digi over a
wide area. This allows you to set s digi path of RELAY,WIDE,WIDE up and get
maximal distribution. Any APRS base (or mobile with a computer onboard) will
pluck a report out of the ether regardless of where the station sits in the
digi path.

Back to duplex operation: The paradigm shift to duplex (and implicit 2

frequency) operation is rough for a lot of the digital types, in my experience. The cost and complexity of a "repeater" is somewhat daunting to them. The TAPR regenerator design (where a total of 7 NRZI transitions is required to start repeating data) has also not made it past the esoterica stage, unfortunately. One should keep in mind that with good audio, 1200 baud can be run with a standard bent-pipe repeater. 9600 baud cannot. That would require use of a TNC or regenerator. The use of duplex. with appropriate signaling to indicate when the channel is busy is not beyond the state of technology, obviously, but is beyond a lot of the basic packet guys.

73, gerry N5JXS
n5jxs@tamu.edu

From WhitBrown@aol.com Fri Dec 08 09:30:38 1995
Received: from emout04.mail.aol.com (emout04.mail.aol.com [198.81.10.12]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id JAA09323 for <regional_freq@tapr.org>; Fri, 8 Dec 1995 09:29:39 -0600 (CST)
From: WhitBrown@aol.com
Received: by emout04.mail.aol.com (8.6.12/8.6.12) id KAA23663; Fri, 8 Dec 1995 10:27:30 -0500
Date: Fri, 8 Dec 1995 10:27:30 -0500
Message-ID: <951208102729_128232646@emout04.mail.aol.com>
To: gerry@cs.tamu.edu, SGranth@aol.com
cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com, regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu, coordinator@cs.tamu.edu, BOB@grayfox.svs.com
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)

In a message dated 95-12-08 09:27:41 EST, gerry@cs.tamu.edu (Gerald J Creager) writes:

>>
>> Further, if the base was full duplex, the repeats could be 'real-time',
>> preventing the 'hidden terminal syndrome'.
>
>
I've heard this argument before, and still see collisions, just as on voice with doubling. Damn anticipatory circuits crapped-out again. I've also heard them say they get an increase in throughput from 40 to 80% over regular digipeating, but they forget that they're now using 100% more frequencies to do it with (duplex, as in a Pair, right?) I don't see the efficiency gained.

73, Whit

From gerry@cs.tamu.edu Fri Dec 08 10:19:07 1995
Received: from cs.tamu.edu (clavin.cs.tamu.edu [128.194.130.106]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id KAA11282 for <regional_freq@tapr.org>; Fri, 8 Dec 1995 10:19:02 -0600 (CST)
Received: from solar.cs.tamu.edu (2961@solar.cs.tamu.edu [128.194.132.1]) by cs.tamu.edu (8.6.10/8.6.4) with ESMTP id JAA10405; Fri, 8 Dec 1995 09:45:40 -0600
From: Gerald J Creager <gerry@cs.tamu.edu>
Received: (gerry@localhost) by solar.cs.tamu.edu (8.6.10/8.6.4) id JAA10377; Fri, 8 Dec 1995 09:45:17 -0600

Message-Id: <199512081545.JAA10377@solar.cs.tamu.edu>
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)
To: WhitBrown@aol.com
Date: Fri, 8 Dec 1995 09:45:17 -0600 (CST)
Cc: gerry@cs.tamu.edu, SGranth@aol.com, bruninga@nadn.navy.mil,
        73303.3537@compuserve.com, cberg@grayfox.svs.com,
        regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
        coordinator@cs.tamu.edu, BOB@grayfox.svs.com
In-Reply-To: <951208102729_128232646@emout04.mail.aol.com> from
"WhitBrown@aol.com" at Dec 8, 95 10:27:30 am
X-Mailer: ELM [version 2.4 PL24]
Content-Type: text

WhitBrown@aol.com sez:
>
> In a message dated 95-12-08 09:27:41 EST, gerry@cs.tamu.edu (Gerald J
> Creager) writes:
>
> >>
> >>   Further, if the base was full duplex, the repeats could be 'real-time',
> >> preventing the 'hidden terminal syndrome'.
> >

Actually, Steve Grantham said this...

>   I've heard this argument before, and still see collisions, just as on voice
> with doubling. Damn anticipatory circuits crapped-out again. I've also heard
> them say they get an increase in throughput from 40 to 80% over regular
> digipeating, but they forget that they're now using 100% more frequencies to
> do it with (duplex, as in a Pair, right?) I don't see the efficiency gained.

Depends on the side you're arguing from. IF you define a packet operation of some sort as important enough, throughput becomes more important. While we are tight on channels, sometimes this has to be considered. In my opinion, duplex operations are more important, and pertinent, to backbone operations than to user operations, at least on the VHF and lower UHF bands. A raging flamefest has been occurring about connected nets and simplex-vs-duplex user operations at S-band and higher frequencies on the TGP-GROUP list from UCSD.edu. Some of the better minds in amateur digital technology are involved, and have failed to reach concensus. It's not an easy problem.

73, gerry

From SGranth@aol.com Fri Dec 08 10:52:17 1995
Received: from mail04.mail.aol.com (mail04.mail.aol.com [152.163.172.53]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id KAA12480 for <regional_freq@tapr.org>;
Fri, 8 Dec 1995 10:52:12 -0600 (CST)
From: SGranth@aol.com
Received: by mail04.mail.aol.com (8.6.12/8.6.12) id LAA11240; Fri, 8 Dec 1995
11:49:52 -0500
Date: Fri, 8 Dec 1995 11:49:52 -0500
Message-ID: <951208114951_48280173@mail04.mail.aol.com>
To: gerry@cs.tamu.edu
cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com,

regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
coordinator@cs.tamu.edu, BOB@grayfox.svs.com, SGranth@aol.com
Subject: Re: APRS Frequencies? (selection in a vacuum??)

Thanks Gerry!

This is pretty much the way I understood it worked, and the way it should work.

The common sense approach to decreasing channel loading is good too. However, there are those with a notable lack of this resource. (This is not a cut, directed or otherwise. It's just an observation.)

Regards,
Steve Grantham, N5DWU
SERA-MS Director

'More than just a tool, communication is a process!'

In a message dated 95-12-08 09:12:29 EST, gerry@cs.tamu.edu (Gerald J Creager) writes:

>Unlike "normal" packet, APRS data bursts are pretty well limited to what's
>needed. The worst case mobiles send a NMEA ascii string of 40-60 characters
>(roughly) while the bases send a somewhat shorter (usually) burst of
>APRS-specific data. You don't see someone doing a "dir" of a BBS for the last
>25k message headers.
>
>Further, unlike "normal" packet operations, where the user has optimized his
>TNC parameters to provide himself with the maximum benefit, APRS optimizes
>the base station parameters for channel usage... sort of an opti-min solution.
>While the mobiles are not similarly controlled, the human tendency to report
>your position every 15 seconds is diminished after a couple of days of coming
>home and noting that yours is the ONLY car reporting like that, and yours is
>filling up the log on your hard disk all the time, while other folks are just
>visible!
>
>73, gerry
>--
>Gerry Creager N5JXS   * SAREX Co-Investigator
>gerry@cs.tamu.edu   *   A little radio that lets kids talk
>   *   to astronauts, and smile
>
>**
*
>
>

From SGranth@aol.com Fri Dec 08 10:52:20 1995
Received: from emout06.mail.aol.com (emout06.mail.aol.com [198.81.10.43]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id KAA12481 for <regional_freq@tapr.org>;
Fri, 8 Dec 1995 10:52:13 -0600 (CST)
From: SGranth@aol.com
Received: by emout06.mail.aol.com (8.6.12/8.6.12) id LAA17843; Fri, 8 Dec 1995
11:49:57 -0500
Date: Fri, 8 Dec 1995 11:49:57 -0500
Message-ID: <951208114955_48280203@emout06.mail.aol.com>
To: gerry@cs.tamu.edu
cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
        coordinator@cs.tamu.edu, BOB@grayfox.svs.com, SGranth@aol.com
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)

In a message dated 95-12-08 09:27:41 EST, gerry@cs.tamu.edu (Gerald J
Creager) writes:

> One should keep in mind that with good audio, 1200 baud can be run
>with a standard bent-pipe repeater. 9600 baud cannot. That would
>require use of a TNC or regenerator. The use of duplex. with appropriate
>signaling to indicate when the channel is busy is not beyond the state of
>technology, obviously, but is beyond a lot of the basic packet guys.
>

  TNC or regenerator? That's exactly the way I was thinking. It's more
technically appropriate, providing signaling as you suggest. And, it'll keep
'Jim Bob' and 'Joe Don' from resorting to analog voice communications
through the digital "bent-pipe repeater" you eluded to.

Regards,
Steve Grantham, N5DWU
SERA-MS Director

  'More than just a tool, communication is a process!'

From SGranth@aol.com Fri Dec 08 10:54:59 1995
Received: from emout06.mail.aol.com (emout06.mail.aol.com [198.81.10.43]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id KAA12521 for <regional_freq@tapr.org>;
Fri, 8 Dec 1995 10:52:31 -0600 (CST)
From: SGranth@aol.com
Received: by emout06.mail.aol.com (8.6.12/8.6.12) id LAB17966; Fri, 8 Dec 1995
11:50:06 -0500
Date: Fri, 8 Dec 1995 11:50:06 -0500
Message-ID: <951208115004_48280284@emout06.mail.aol.com>
To: regional_freq@tapr.org, coordinator@cs.tamu.edu
cc: cberg@grayfox.svs.com, FCorsanos@aol.com, DBILL@uic.edu,
        BOB@grayfox.svs.com, 73303.3537@compuserve.com, bruninga@nadn.navy.mil,
        SGranth@aol.com
Subject: SERA 70cm Digital Frequencies

Gentlemen,

  What you will see below is a quickly prepared extract, for your information, copied and pasted from the SERA 70cm Frequency Utilization Plan.

  References to 12.5 kc narrowband channelization, and to wideband channels, is primarily intended to focus attention on the fact that these frequencies are allocated to digital.

(If the channelization does not fit your idea of how it should be done, or if you think the wideband plan is too complicated for implementation and use, please know this has been considered.)

(The 12.5 kHz steps have been 'under attack' for being too narrow for 9600 bps operations. Channels coordinated for 9600 bps use are, like other coordinated channels, being coordinated with adjacent channel use considered. The listing of 12.5 kc channels was intended to preclude homesteading of unidentified channels by users of conflicting modes of operation.)

Regards,
Steve Grantham, N5DWU
SERA-MS Director

  'More than just a tool, communication is a process!'

SERA 70cm FUP, Digital Extract (w/ references to digital...)

441.1750	User/Dig	Simplex	Digital	NBFM	Vert
441.1625	User/Dig	Simplex	Digital	NBFM	Vert
441.1500	User/Dig	Simplex	Digital	NBFM	Vert
441.1375	User/Dig	Simplex	Digital	NBFM	Vert
441.1250	User/Dig	Simplex	Digital	NBFM	Vert
441.1125	User/Dig	Simplex	Digital	NBFM	Vert
441.1000	User/Dig	Simplex	Digital	NBFM	Vert
441.0875	User/Dig	Simplex	Digital	NBFM	Vert
441.0750	User/Dig	Simplex	Digital	NBFM	Vert
441.0625	User/Dig	Simplex	Digital	NBFM	Vert
441.0500	User/Dig	Simplex	Digital	NBFM	Vert
441.0375	User/Dig	Simplex	Digital	NBFM	Vert
441.0250	User/Dig	Simplex	Digital	NBFM	Vert
441.0125	User/Dig	Simplex	Digital	NBFM	Vert
441.0000	User/Dig	Simplex	Digital	NBFM	Vert
440.9875	User/Dig	Simplex	Digital	NBFM	Vert
440.9750	User/Dig	Simplex	Digital	NBFM	Vert
440.9625	User/Dig	Simplex	Digital	NBFM	Vert
440.9500	User/Dig	Simplex	Digital	NBFM	Vert
440.9375	User/Dig	Simplex	Digital	NBFM	Vert
440.9250	User/Dig	Simplex	Digital	NBFM	Vert
440.9125	User/Dig	Simplex	Digital	NBFM	Vert

445.7250	Rptr In	Duplex	Digital	NBFM	Vert
445.7125	Rptr In	Duplex	Digital	NBFM	Vert
445.7000	Rptr In	Duplex	Digital	NBFM	Vert
445.6875	Rptr In	Duplex	Digital	NBFM	Vert
445.6750	Rptr In	Duplex	Digital	NBFM	Vert
445.6625	Rptr In	Duplex	Digital	NBFM	Vert
445.6500	Rptr In	Duplex	Digital	NBFM	Vert
445.6375	Rptr In	Duplex	Digital	NBFM	Vert
445.6250	Rptr In	Duplex	Digital	NBFM	Vert
445.6125	Rptr In	Duplex	Digital	NBFM	Vert
445.6000	Rptr In	Duplex	Digital	NBFM	Vert
445.5875	Rptr In	Duplex	Digital	NBFM	Vert
445.5750	Rptr In	Duplex	Digital	NBFM	Vert
445.5625	Rptr In	Duplex	Digital	NBFM	Vert
445.5500	Rptr In	Duplex	Digital	NBFM	Vert
445.5375	Rptr In	Duplex	Digital	NBFM	Vert
445.5250	Rptr In	Duplex	Digital	NBFM	Vert
445.5125	Rptr In	Duplex	Digital	NBFM	Vert

440.7250	Rptr Out	Duplex	Digital	NBFM	Vert
440.7125	Rptr Out	Duplex	Digital	NBFM	Vert
440.7000	Rptr Out	Duplex	Digital	NBFM	Vert
440.6875	Rptr Out	Duplex	Digital	NBFM	Vert
440.6750	Rptr Out	Duplex	Digital	NBFM	Vert
440.6625	Rptr Out	Duplex	Digital	NBFM	Vert
440.6500	Rptr Out	Duplex	Digital	NBFM	Vert
440.6375	Rptr Out	Duplex	Digital	NBFM	Vert
440.6250	Rptr Out	Duplex	Digital	NBFM	Vert
440.6125	Rptr Out	Duplex	Digital	NBFM	Vert
440.6000	Rptr Out	Duplex	Digital	NBFM	Vert
440.5875	Rptr Out	Duplex	Digital	NBFM	Vert
440.5750	Rptr Out	Duplex	Digital	NBFM	Vert
440.5625	Rptr Out	Duplex	Digital	NBFM	Vert
440.5500	Rptr Out	Duplex	Digital	NBFM	Vert
440.5375	Rptr Out	Duplex	Digital	NBFM	Vert
440.5250	Rptr Out	Duplex	Digital	NBFM	Vert
440.5125	Rptr Out	Duplex	Digital	NBFM	Vert

445.5000	Wide-Band Digital Channel Edge				
445.4750	Uplink	50 kHz	Digital	WB	Vert
445.4500	Uplink	100 kHz	Digital	WB	Vert
445.4250	Uplink	50 kHz	Digital	WB	Vert
445.4000	Uplink	100 kHz	Digital	WB	Horiz
445.3750	Uplink	50 kHz	Digital	WB	Vert
445.3500	Uplink	100 kHz	Digital	WB	Vert
445.3250	Uplink	50 kHz	Digital	WB	Vert
445.3000	Uplink	100 kHz	Digital	WB	Horiz
445.2750	Uplink	50 kHz	Digital	WB	Vert
445.2500	Uplink	100 kHz	Digital	WB	Vert
445.2250	Uplink	50 kHz	Digital	WB	Vert
445.2000	Uplink	100 kHz	Digital	WB	Horiz
445.1750	Uplink	50 kHz	Digital	WB	Vert
445.1500	Uplink	100 kHz	Digital	WB	Vert

445.1250 Uplink   50 kHz   Digital WB   Vert
445.1000 Uplink   100 kHz Digital WB   Horiz
445.0750 Uplink   50 kHz   Digital WB   Vert
445.0500 Uplink   100 kHz Digital WB   Vert
445.0250 Uplink   50 kHz   Digital WB   Vert
445.0000 Wide-Band Digital Channel Edge

440.5000 Wide-Band Digital Channel Edge
440.4750 Downlink 50 kHz   Digital WB   Vert
440.4500 Downlink 100 kHz Digital WB   Vert
440.4250 Downlink 50 kHz   Digital WB   Vert
440.4000 Downlink 100 kHz Digital WB   Horiz
440.3750 Downlink 50 kHz   Digital WB   Vert
440.3500 Downlink 100 kHz Digital WB   Vert
440.3250 Downlink 50 kHz   Digital WB   Vert
440.3000 Downlink 100 kHz Digital WB   Horiz
440.2750 Downlink 50 kHz   Digital WB   Vert
440.2500 Downlink 100 kHz Digital WB   Vert
440.2250 Downlink 50 kHz   Digital WB   Vert
440.2000 Downlink 100 kHz Digital WB   Horiz
440.1750 Downlink 50 kHz   Digital WB   Vert
440.1500 Downlink 100 kHz Digital WB   Vert
440.1250 Downlink 50 kHz   Digital WB   Vert
440.1000 Downlink 100 kHz Digital WB   Horiz
440.0750 Downlink 50 kHz   Digital WB   Vert
440.0500 Downlink 100 kHz Digital WB   Vert
440.0250 Downlink 50 kHz   Digital WB   Vert
440.0000 Wide-Band Digital Channel Edge

439.8000 Band +/- 200 kHz   Digital WB   Vert *2

430.9500 Simplex 100 kHz Digital WB   Horiz
430.8500 Simplex 100 kHz Digital WB   Horiz
430.7500 Rptr Out ATV#2a   Audio   NBFM Vert
430.6500 Simplex 100 kHz Digital WB   Horiz
430.5500 Simplex 100 kHz Digital WB   Horiz
430.4500 Simplex 100 kHz Digital WB   Horiz
430.3500 Simplex 100 kHz Digital WB   Horiz
430.2500 Simplex 100 kHz Digital WB   Horiz
430.1500 Simplex 100 kHz Digital WB   Horiz
430.0500 Simplex 100 kHz Digital WB   Horiz

Duplex Digital Channels:
Digital duplex repeater frequency pairs will be coordinated,
just as duplex voice systems (repeaters and links) are.

Simplex Voice and Digital:
These simplex operations are generally itinerant in nature, and
will not be coordinated. (These are primarily user operations.)

430-431 MHz:
Wide Band Digital Band. Nine 100 kHz bandwidth channels.

430.750 MHz is reserved for ATV audio.

439-440 MHz:
Repeater Links and Digital Spectrum as defined in this FUP.

440-442 MHz:
Digital and Voice Channels as defined in this FUP.

445-447 MHz:
Digital and Voice Channels as defined in this FUP.

FUP Notes:
*2) Digital band from 439.6 to 440 MHz may use the

necessary or desired antenna polarity as needed.

This document was prepared by Steve Grantham N5DWU.

Coordinators may direct queries to N5DWU at:

P.O. Box 127 or to Steve Grantham via

Ellisville MS 39437-0127 EMAIL SGranth@AOL.com

From 73303.3537@compuserve.com Fri Dec 08 11:07:43 1995
Received: from arl-img-5.compuserve.com (arl-img-5.compuserve.com [198.4.7.5]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id LAA13248 for <regional_freq@tapr.org>; Fri, 8 Dec 1995 11:07:40 -0600 (CST)
Received: by arl-img-5.compuserve.com (8.6.10/5.950515)
id MAA17242; Fri, 8 Dec 1995 12:06:30 -0500
Date: 08 Dec 95 12:03:57 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: APRS on 440
Message-ID: <951208170356_73303.3537_FHM90-2@CompuServe.COM>

---------- Forwarded Message ----------

From: Gary Hendrickson, INTERNET:GHENDRIC@fcc.gov
TO: (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/8/95 9:46 AM

RE: APRS on 440

Sender: ghendric@fcc.gov
Received: from cs.tamu.edu by arl-img-2.compuserve.com (8.6.10/5.950515)
id KAA29703; Fri, 8 Dec 1995 10:37:52 -0500
Received: from gatekeeper.fcc.gov (gatekeeper.fcc.gov [192.104.54.1]) by cs.tamu.edu (8.6.10/8.6.4) with SMTP id JAA09881 for <coordinator@cs.tamu.edu>; Fri, 8 Dec 1995 09:28:19 -0600
Received: by gatekeeper.fcc.gov (5.65/DEC-Ultrix/4.3)
id AA08568; Fri, 8 Dec 1995 09:57:31 -0500
Received: from unknown(165.135.0.16) by gatekeeper via smap (V1.0mjr)
id sma008512; Fri Dec 8 09:57:05 1995

Received: from FCCMAIL-Message_Server by fcc.gov
     with Novell_GroupWise; Fri, 08 Dec 1995 10:29:03 -0500
Message-Id: <s0c8136f.014@fcc.gov>
X-Mailer: Novell GroupWise 4.1
Date: Fri, 08 Dec 1995 10:26:18 -0500
From: Gary Hendrickson <GHENDRIC@fcc.gov>
To: coordinator@cs.tamu.edu
Subject: APRS on 440

I'll start by saying that I'm an APRS outsider, and admit that I don't know a whole lot about it. I have learned quite a bit by reading the remailer. Thanks for the education, guys.

Now, for some opinions, and another suggestion to go into the pot.

First, we all recognize 446.000 as the nation-wide FM simplex calling frequency (I hope this assumption is reasonably correct, HI). Here in the T-MARC area, and I believe in many other areas, we have designated a few surrounding frequencies for simplex operations, and we are attempting to protect these frequencies from encroachment by non-simplex users. In particular, the block from 449.925 thru 446.075 is set aside for simplex.

Note that in the entire 420 - 450 Mhz band (that's 30 Mhz, guys), there are ONLY SEVEN channels set aside for FM simplex!!!! Does anyone believe that is too many frequencies for simplexers? I hope not! The 2-Meter band has more simplex frequencies than that, and it's only 4 Mhz wide! Yes, other parts of the country may have other band segments set aside for simplex, maybe not. But as coordinators, I believe we all have an obligation to look out for simplexer's interests as well as the rest of our regular constituents. Simplexers need and deserve some protected frequencies in the 440 band.

Therefore, I respectfully suggest that 445.925 is not a particularly good choice for APRS (not to mention the fact that this frequency is currently used by some form of coordinated operations is other parts of the country). Several years ago, a local packet sysop plopped his wide-area node down on 446.075. When queried about his choice of frequencies, part of his response was to the effect that the local packet community "had absolutely no intention of participating in any form of frequency coordination program. PERIOD!!" Well, I suspect that 446.075 is gone forever as an FM voice simplex frequency in this area. Sigh! (I believe that individual is now gone. I sure hope his successors don't carry the same attitude, and I am quite certain that they do not. But I also don't believe the current packet users on 446.075 are planning to vacate, nor would they be particularly happy of asked to. Time will tell.)

Now for my suggestion, which is based upon several premises, including:

1. It appears that there is a need for only one common nation-wide frequency for APRS (unless some form of repeater, digi, or other multi-frequency system evolves);

2. The 440 - 450 Mhz segment of the band is probably the most crowded, with FM voice (including repeaters, control and links, etc.) and ATV operations;

3. 439.25 Mhz ATV uses upper vestigial sideband (or it probably should if it doesn't already);

4. Inexpensive, dedicated, 9600 baud transmitters, and relatively inexpensive crystal-controled receivers, are available. And if APRS continues to grow in popularity, as some people anticipate, more inexpensive equipment will become available, especially if a dedicated frequency can be agreed upon;

5. There are international implications for APRS. Hence, a serious look at spectrum between 430 and 440 Mhz would be worthwhile;

6. There appears to be no need for this form of packet operation to be within the same band segments as other packet activity, as (from what little I know about it) the APRS system appears to be totally independent of virtaully all other forms of packet activity (my assumption is certainly open to re-education). (For the purposes of this discussion, I am talking strictly about the mobile transmiters, not about any links to interconnect the various fixed stations).

My suggestion is to look at 438.00, or nearby., for the following reasons:

1. This is at the top end of the international satellite sub-band, and (I hope) would cause a minimum of problems for the satellite community;

2. This as at the bottom of the 439.25 ATV channel, so should also cause a minimum of problems for ATV'ers;

3. The inexpensive, crystal-controlled receivers and transmitters will tune to this part of the band, I think.

4. Should the need arise, several channels in this same area would appear to be available for various forms of system expansion;

5. Frequencies used here might be "paired" with something near the low end of the 430 band, should the need arise;

6. If acceptable, this frequency selection looks like it might be one that could last for at least a few years;

7. This appears to be one of the less busy segments of the band.

Yes, there are some APRS users that have FM radios that only cover 440 to 450 Mhz. But due to the advantages cited above, I suspect most of them would not be too hesitant to spend a few bucks to move somewhere that they might be able to stay for several years.

Your thoughts?

Season's greetings & 73 to all, Gary W3DTN

From SGranth@aol.com Fri Dec 08 11:38:17 1995
Received: from mail06.mail.aol.com (mail06.mail.aol.com [152.163.172.108]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id LAA14233 for <regional_freq@tapr.org>;
Fri, 8 Dec 1995 11:38:14 -0600 (CST)
From: SGranth@aol.com
Received: by mail06.mail.aol.com (8.6.12/8.6.12) id MAA02164; Fri, 8 Dec 1995
12:36:27 -0500
Date: Fri, 8 Dec 1995 12:36:27 -0500
Message-ID: <951208123626_128318091@mail06.mail.aol.com>
To: gerry@cs.tamu.edu, WhitBrown@aol.com
cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
        coordinator@cs.tamu.edu, BOB@grayfox.svs.com, SGranth@aol.com
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)

WRONG! Actually, Whit Brown said it in reply to me!

73!
Steve Grantham, N5DWU

In a message dated 95-12-08 10:55:19 EST, gerry@cs.tamu.edu (Gerald J
Creager) writes:

>Actually, Steve Grantham said this...
>
>>   I've heard this argument before, and still see collisions, just as on
>>voice with doubling. Damn anticipatory circuits crapped-out again. I've
also
>>heard them say they get an increase in throughput from 40 to 80% over
regular
>>digipeating, but they forget that they're now using 100% more frequencies
>>to do it with (duplex, as in a Pair, right?) I don't see the efficiency
gained.
>

From 73303.3537@compuserve.com Fri Dec 08 14:43:24 1995
Received: from arl-img-4.compuserve.com (arl-img-4.compuserve.com [198.4.7.4]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id OAA20459 for <regional_freq@tapr.org>;
Fri, 8 Dec 1995 14:43:21 -0600 (CST)
Received: by arl-img-4.compuserve.com (8.6.10/5.950515)
     id PAA24201; Fri, 8 Dec 1995 15:42:49 -0500
Date: 08 Dec 95 15:37:06 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: Fwd: 145.7900 APRS frequency choice...
Message-ID: <951208203705_73303.3537_FHM64-1@CompuServe.COM>

---------- Forwarded Message ----------

From: INTERNET:KK9T@aol.com, INTERNET:KK9T@aol.com
TO: (unknown), INTERNET:BOB@NPR.LEGENT.COM
     Mark J. Thompson, 73303,3537
     (unknown), INTERNET:CBERG@GRAYFOX.SVS.COM
     (unknown), INTERNET:DBILL@UIC.EDU
     (unknown), INTERNET:FCORSANOS@AOL.COM
     (unknown), INTERNET:ARUTZ@ADSNET.COM
     (unknown), INTERNET:DDALEY@ADSNET.COM
     (unknown), INTERNET:JES@FWI.COM
     (unknown), INTERNET:IBFUN@AOL.COM
     (unknown), INTERNET:KE9LZ@NETNET.NET
CC: (unknown), INTERNET:2006784@MCIMAIL.COM
     (unknown), INTERNET:SGRANTH@AOL.COM
     (unknown), INTERNET:3904185@MCIMAIL.COM
     (unknown), INTERNET:VEV@CONCH.AA.MSEN.COM
     (unknown), INTERNET:WA8HSU@AOL.COM
     (unknown), INTERNET:WB9SHY@AOL.COM
     (unknown), INTERNET:ATVQ@AOL.COM
     (unknown), INTERNET:3511297@MCIMAIL.COM
     (unknown), INTERNET:MIKEM@MRE.COM
     (unknown), INTERNET:KK9T@AOL.COM
     (unknown), INTERNET:N9UNR@EXECPC.COM
     (unknown), INTERNET:JEFF.ETV@WKU.EDU
DATE: 12/8/95 11:56 AM

RE: Fwd: 145.7900 APRS frequency choice...

Sender: kk9t@aol.com
Received: from mail02.mail.aol.com by dub-img-6.compuserve.com (8.6.10/5.950515)
     id MAA10166; Fri, 8 Dec 1995 12:48:40 -0500
From: <KK9T@aol.com>
Received: by mail02.mail.aol.com (8.6.12/8.6.12) id MAA07114; Fri, 8 Dec 1995
12:42:01 -0500
Date: Fri, 8 Dec 1995 12:42:01 -0500
Message-ID: <951208124200_48321023@mail02.mail.aol.com>
To: bob@npr.legent.com, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        dbill@uic.edu, FCorsanos@aol.com, arutz@adsnet.com, ddaley@adsnet.com,
        jes@fwi.com, IBFUN@aol.com, ke9lz@netnet.net
cc: 2006784@mcimail.com, SGranth@aol.com, 3904185@mcimail.com,
        vev@conch.aa.msen.com, WA8HSU@aol.com, WB9SHY@aol.com, ATVQ@aol.com,
        3511297@mcimail.com, mikem@mre.com, KK9T@aol.com, n9unr@execpc.com,
        JEFF.ETV@wku.edu
Subject: Fwd: 145.7900 APRS frequency choice...

Forwarded message:
From: fontej@DUBLIN7.MSMAIL.LITEL.COM (Fonte, Jim)
To: kk9t@aol.com (me)
Date: 95-12-08 11:22:18 EST

After "running the numbers", re: 145.7900 MHz. as the choice for the
national APRS frequency, I find the following...

Baseline assumptions:
1.- The DESIRED "center" frequency" is 145.7900 MHz.
2.- One can arbitrarily assume a worst-case frequency tolerance of +/- 750 Hz.
3.- The "squawk" data-rate is 1200 bps.
4.- The APRS receiver will have a modulation acceptance window of approximately 16 kHz. -to approximately- 24 kHz. bandwidth, by manufacturer design.
5.- The transmitter deviation adjustment for a commercially manufactured piece of "ham" gear will likely be set +/- 5.0 kHz. -to- +/- 6.0 kHz., OUT-OF-THE-BOX.
6.- The maximum-modulating-frequency of a 1200 -or- 2400 bps. packet transmitter is 2200 Hz. (2.2 kHz.)
7.- A guard-band of 2.5 kHz. bandwidth is an absolute minimum desirable deadspace needed to safeguard sub-bands of differing modes (FM Vs. SSB, etc.).

"Window" of transmitter frequency operation:
1.- Again, the DESIRED center-frequency is 145.7900 MHz.
2.- The lowest center-carrier point of frequency-error should be 145.78925 MHz.
3.- The highest center-carrier point of frequency-error should be 145.79075 MHz.

Calculated bandwidth of the APRS transmitter:
 ---TX BW = 2x(peak-deviation) + 2x(max-mod-freq)
 ---Total assigned channel BW = 2x(peak-deviation) + 2x(max-mod-freq) + 2x(TX-error)

WORST-CASE BW referenced to worst-case frequency-error:
a.- +/- 6 kHz. peak-deviation, center-CX @ 145.79075 MHz.
b.- 2x(6) + 2x(2.2) + 2x(.75) = 17.9 kHz. (total TX bandwidth)
c.- 17.9 / 2 = 8.95 kHz. (1/2 TX bandwidth re: center CX-freq)
d.- 145.79075 + .00895 = (145.7997 MHz). -and- 145.79075 - .00895 = (145.7818 MHz.)
e.- The worst-case frequency error and worst-case peak-deviation puts the "edge" of the APRS TX too-close (145.8000 - 145.7997 = _300 Hz._), referenced to 145.8000 MHz....NOT DESIRABLE! A 300 Hz. guardband is NOT enough "deadspace" to protect the band-edge of the amateur satellite subband.

BEST-CASE BW referenced to worst-case frequency-error:
a.- +/- 2.0 kHz. peak-deviation, center-CX @ 145.79075 MHz.
b.- 2x(2) + 2x(2.2) + 2x(.75) = 9.9 kHz. (total TX bandwidth)
c.- 9.9 / 2 = 4.95 kHz. (1/2 TX bandwidth re: center-CX-freq)
d.- 145.79075 + .00495 = (145.7957 MHz.) -and- 145.79075 - .00495 = (145.7858 MHz.)
e.- The worst-case frequency-error and the best-case peak-deviation puts the "edge" of the APRS TX (145.8000 - 145.7957 = _4.3 kHz._) __4.3 kHz.__ from the 145.8000 satellite sub-band edge...MORE THAN ENOUGH GUARDBAND TO SAFEGUARD THE SATELLITE SUBBAND. VERY MUCH DESIRABLE!!

THE TRANSMITTER-MODULATION INJECTION POINT -------

1.- If the radio amateur is going to "feed" the MIC jack with the TNC tones, (this audio input will pre-emphasize the audio frequencies at a 6dB/octave rate), so the peak-deviation adjustment should be made using the 2200 Hz. tone from the TNC, and the peak deviation should be set to +/- 2.0 kHz. MAXIMUM.
2.- If the radio amateur is going to inject the TNC modulation directly to the FM modulator (NO PREMPHASIS), the 1200 Hz. tone should be adjusted to deviate the transmitter to +/- 1.0 kHz. MAXIMUM -and- the 2200 Hz. tone should be adjusted to deviate the transmitter to +/- 2.0 kHz. MAXIMUM.

CONCLUSION:
1.- 145.7900 MHz. is a viable and sensible choice for national APRS operation IF:
a.- the radio amateur operating the APRS TX is fully aware of the problems that could be caused to other operations in the amateur satellite subband IF the APRS transmitter center-frequency tolerance AND the transmitter peak-deviation are not maintained at a minimum standard (as described above).
b.- the radio amateur takes FULL RESPONSIBILITY for the proper maintenance of his APRS transmitter(s), BEFORE he puts such a transmitter on this frequency.
c.- the radio amateur DOES NOT ASSUME that the manufacturer of his APRS transmitter has adjusted the peak-deviation and center-CX frequency correctly...he will verify the proper operation of this transmitter BEFORE putting it on-the-air.

Education, discussion, compromise, understanding, compliance, responsibility, and implimentation...THESE ARE THE KEY ELEMENTS NECESSARY FOR _ANY_ (!) OF OUR AMATEUR RADIO PROJECTS AND PROCESSES TO BE SUCCESSFUL...nothing less!

73,
Jim Fonte, KK9T

From 73303.3537@compuserve.com Fri Dec 08 16:39:40 1995
Received: from dub-img-6.compuserve.com (dub-img-6.compuserve.com [198.4.9.6]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id QAA24113 for <regional_freq@tapr.org>; Fri, 8 Dec 1995 16:39:37 -0600 (CST)
Received: by dub-img-6.compuserve.com (8.6.10/5.950515)
     id RAA14473; Fri, 8 Dec 1995 17:39:05 -0500
Date: 08 Dec 95 17:32:42 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: Digital Coordinators <regional_freq@tapr.org>
Subject: ARRL in the coordination business?????
Message-ID: <951208223241_73303.3537_FHM54-1@CompuServe.COM>

---------- Forwarded Message ----------

From: INTERNET:vev@conch.aa.msen.com, INTERNET:vev@conch.aa.msen.com
TO: (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/8/95 3:12 PM

RE: ARRL in the coordination business?????

Sender: vev@msen.com
Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id PAA28133; Fri, 8 Dec 1995 15:58:48 -0500
Received: from conch.aa.msen.com (root@conch.aa.msen.com [148.59.6.20]) by
cs.tamu.edu (8.6.10/8.6.4) with ESMTP id OAA20285 for <coordinator@cs.tamu.edu>;
Fri, 8 Dec 1995 14:57:20 -0600
Received: from VINNY (vev@conch.aa.msen.com [148.59.6.20]) by conch.aa.msen.com
(8.6.12/8.6.12) with SMTP id PAA02108 for <coordinator@cs.tamu.edu>; Fri, 8 Dec
1995 15:57:41 -0500
Message-Id: <199512082057.PAA02108@conch.aa.msen.com>
From: vev@conch.aa.msen.com
Date: Fri, 08 Dec 95 15:33:19 0500
To: coordinator@cs.tamu.edu
Subject: ARRL in the coordination business?????
In-Reply-To: <951208140637_128377211@emout06.mail.aol.com>
X-Mailer: MR/2 Internet Cruiser Edition v0.99d

Feast your eyes on FCC Part 97.303(e)(1)(2)(3)(4)

1) deals with the use of 219-220MHz.
2) deals with the shared use of 219-220MHz.
3) No amateur may transmit in the 219-220MHz segment until written
notification as to
   geographical location of transmitters is given to the ARRL 30 days prior
to the start
   transmission.
4) No station may transmit in this segment within 640KM of a AMTS coast
station
   unless written permission has been received from the AMTS licensee --
AMTS
   license info may be acquired from the ARRL or InterActive Systems Inc.

Now then, I thought the ARRL said they weren't in the coordination
business?

When was the public notice of proposed rule change posted? Why weren't
these even mentioned at the BOM??? Thes is as of a current listing of the
rules dated 11/17/95.

What are these, custom made rules? How about 97.113(d), it describes
W1AW!!!!!

Vince.
--
==
Vince Vielhaber -- KA8CSH   email: vev@msen.com   flame-mail: /dev/null
             Database Manager -- Coordinator Michigan Area Repeater Council
                  MSEN.COM is NOT the Microsoft Network!!
include <std/disclaimers.h>   TEAM TIA   TEAM-OS2
==

From 73303.3537@compuserve.com Fri Dec 08 17:34:00 1995
Received: from dub-img-4.compuserve.com (dub-img-4.compuserve.com [198.4.9.4]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id RAA26050 for <regional_freq@tapr.org>;
Fri, 8 Dec 1995 17:33:47 -0600 (CST)
Received: by dub-img-4.compuserve.com (8.6.10/5.950515)
     id SAA26958; Fri, 8 Dec 1995 18:32:44 -0500
Date: 08 Dec 95 18:27:01 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: Digital Coordinators <regional_freq@tapr.org>
Subject: ARRL in the coordination business?????
Message-ID: <951208232701_73303.3537_FHM4-1@CompuServe.COM>

---------- Forwarded Message ----------

From: MENDELS, INTERNET:MENDELS@ccabc.com
TO: (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU
CC: (unknown), INTERNET:DSUMNER@ARRL.ORG
     (unknown), INTERNET:0002805867@MCIMAIL.COM
     (unknown), INTERNET:QUIAT@CSN.NET
     (unknown), INTERNET:0002993599@MCIMAIL.COM
     (unknown), INTERNET:2542030@MCIMAIL.COM
     (unknown), INTERNET:3113659@MCIMAIL.COM
DATE: 12/8/95 4:56 PM

RE: ARRL in the coordination business?????

Sender: mendels@ccabc.com
Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id RAA17962; Fri, 8 Dec 1995 17:33:30 -0500
Received: from interlock.ccabc.com (interlock.ccabc.com [198.81.203.2]) by
cs.tamu.edu (8.6.10/8.6.4) with SMTP id QAA23199 for <coordinator@cs.tamu.edu>;
Fri, 8 Dec 1995 16:32:26 -0600
Received: from smtp.ccabc.com by interlock.ccabc.com with SMTP id AA41592
  (InterLock SMTP Gateway 1.1 for
<@internet.ccabc.com:coordinator@cs.tamu.edu>);
  Fri, 8 Dec 1995 17:32:53 -0500
Message-Id: <199512082232.AA41592@interlock.ccabc.com>
From: MENDELS@ccabc.com (MENDELS)
Date: Fri, 08 Dec 1995 17:27 EST
To: coordinator@cs.tamu.edu
Cc: dsumner@arrl.org, 0002805867@mcimail.com, quiat@csn.net,
        0002993599@mcimail.com, 2542030@mcimail.com, 3113659@mcimail.com
Subject: ARRL in the coordination business?????

Hi Vince. Guess you missed the several year long battle in which ARRL
fought the commercial interests all the way to the Federal Court of Appeals
in the fight for 220-222 MHz.

Guess you must have been a bit distracted and didn't see the more-than-
a-year long proceeding that the FCC held in the matter of reallocation of
219-220 MHz.

I assume you also must have missed the Report and Order in which it
was stated that the only way that the current primary service, AMTS,
would agree to sharing the 219-220 MHz spectrum with the Amateur
Radio Service would be if a single national data-base administrator
acted on behalf of the Amateur Radio Service as a single point of
contact for the AMTS licensees. In that same document you will
see that the FCC named ARRL the data-base administrator.

A data base administrator is NOT a frequency coordinator.

>>Feast your eyes on FCC Part 97.303(e)...(3)(4)

<snip>

> 3) No amateur may transmit in the 219-220MHz segment until written
> notification as to geographical location of transmitters is given to
> the ARRL 30 days prior to the start transmission.

So ARRL can notify the AMTS coordinee in the area. Please note
that the League doesn't select nor recommend the frequency, it
merely passes the information on to the AMTS licensee in the
affected area.

>4) No station may transmit in this segment within 640KM of a AMTS coast
>station unless written permission has been received from the AMTS
>licensee --AMTS license info may be acquired from the ARRL or
>InterActive Systems Inc.

The agreement is between the AMTS station and the ARS licensee.
The League provides information to both sides who the principals
on the other side are e.g. name and address contact information.

>Now then, I thought the ARRL said they weren't in the coordination
>business?

ARRL isn't. A complete understanding, based on knowledge of
how the rulemaking came about would illustrate that.

> When was the public notice of proposed rule change posted? Why weren't
> these even mentioned at the BOM???

The League fought long and hard on behalf of Amateur Radio to save the
220-222 MHz
portion of the band. If you missed that you missed one of the great fights
of the decade.

Many of us were quite proud of just how far the Board was willing to go to
save the
segment. Letters to congress, heavy lobbying of the FCC, a lawsuit to get
the band
back after it was allocated to the commercial ACSSB interests and finally a
trip to
the federal court of appeals marked just how hard ARRL fought to save this
portion of the spectrum.

When it looked like we would not retain this portion of the band the ARRL redirected it's energies to attain another segment as replacement spectrum. The entire issue took place over a 4 or 5 year span.

None of this was mentioned at the BOM because it was ancient history by then.

Is this new news to you? Perhaps you should have quietly asked before you issued your harsh-sounding declaration.

The whole issue is one of ARRL's finest moments and one our members indicated that they were quite proud of.

Have a good Holiday season. Regards.

 -73- Steve Mendelsohn, WA2DHF

From gerry@cs.tamu.edu Sat Dec 09 08:12:10 1995
Received: from cs.tamu.edu (clavin.cs.tamu.edu [128.194.130.106]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id IAA25396 for <regional_freq@tapr.org>; Sat, 9 Dec 1995 08:12:08 -0600 (CST)
Received: from solar.cs.tamu.edu (2961@solar.cs.tamu.edu [128.194.132.1]) by cs.tamu.edu (8.6.10/8.6.4) with ESMTP id HAA02273; Sat, 9 Dec 1995 07:55:45 -0600
From: Gerald J Creager <gerry@cs.tamu.edu>
Received: (gerry@localhost) by solar.cs.tamu.edu (8.6.10/8.6.4) id HAA26741; Sat, 9 Dec 1995 07:55:42 -0600
Message-Id: <199512091355.HAA26741@solar.cs.tamu.edu>
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)
To: SGranth@aol.com
Date: Sat, 9 Dec 1995 07:55:41 -0600 (CST)
Cc: gerry@cs.tamu.edu, bruninga@nadn.navy.mil, 73303.3537@compuserve.com,
        cberg@grayfox.svs.com, regional_freq@tapr.org, FCorsanos@aol.com,
        DBILL@uic.edu, coordinator@cs.tamu.edu, BOB@grayfox.svs.com
In-Reply-To: <951208114955_48280203@emout06.mail.aol.com> from "SGranth@aol.com" at Dec 8, 95 11:49:57 am
X-Mailer: ELM [version 2.4 PL24]
Content-Type: text

SGranth@aol.com sez:
>
>   TNC or regenerator? That's exactly the way I was thinking. It's more
> technically appropriate, providing signaling as you suggest. And, it'll keep
> 'Jim Bob' and 'Joe Don' from resorting to analog voice communications
> through the digital "bent-pipe repeater" you eluded to.

For my time & money, the regenerator is the way to go, especially if we go to the effort of finding a good site and hardware for a duplex operation. It seems more'n a little silly, tho' to do a regenerator at 1200 baud, while at 9600 baud or higher, it makes sense.

But we stray from the topic of APRS and a dedicated system desirous of a

homeland!

I can see APRS stations migrating toward 9600 baud sometime soon, and
especially as they migrate to 70 cm. The technology is getting easier and
easier. Then, I think the digipeater guys can make a significant leap.

73, gerry

From SGranth@aol.com Sat Dec 09 09:12:03 1995
Received: from emout06.mail.aol.com (emout06.mail.aol.com [198.81.10.43]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id JAA27400 for <regional_freq@tapr.org>;
Sat, 9 Dec 1995 09:12:00 -0600 (CST)
From: SGranth@aol.com
Received: by emout06.mail.aol.com (8.6.12/8.6.12) id KAA14062; Sat, 9 Dec 1995
10:10:03 -0500
Date: Sat, 9 Dec 1995 10:10:03 -0500
Message-ID: <951209101002_129000444@emout06.mail.aol.com>
To: WhitBrown@aol.com, gerry@cs.tamu.edu
cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
        coordinator@cs.tamu.edu, BOB@grayfox.svs.com, SGranth@aol.com
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)

In a message dated 95-12-08 10:45:41 EST, WhitBrown@aol.com writes:

>>>
>>>   Further, if the base was full duplex, the repeats could be 'real-time',
>>> preventing the 'hidden terminal syndrome'.
>>
>>
> I've heard this argument before, and still see collisions, just as on
voice
>with doubling. Damn anticipatory circuits crapped-out again. I've also heard
>them say they get an increase in throughput from 40 to 80% over regular
>digipeating, but they forget that they're now using 100% more frequencies to
>do it with (duplex, as in a Pair, right?) I don't see the efficiency gained.
>
>73, Whit
>
>

  Well Whit... nobody is perfect, especially not a machine created by man.
 The control circuitry, logic, and parameters that let the TNC decide when to
start transmitting are all under the control and influence of man. Even men
will key the microphone and double on voice transmissions, and they use
paired frequencies for repeaters too. There are lots of good and practical
reasons for split frequency operations, and you don't necessarily need to
transmit and receive simultaneously on both frequencies to gain the benefits.

Regards,
Steve Grantham, N5DWU

...This is not an argument, it's just fact...

From WhitBrown@aol.com Sun Dec 10 14:45:39 1995
Received: from emout05.mail.aol.com (emout05.mail.aol.com [198.81.10.37]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id OAA25483 for <regional_freq@tapr.org>;
Sun, 10 Dec 1995 14:45:35 -0600 (CST)
From: WhitBrown@aol.com
Received: by emout05.mail.aol.com (8.6.12/8.6.12) id PAA26319; Sun, 10 Dec 1995
15:43:26 -0500
Date: Sun, 10 Dec 1995 15:43:26 -0500
Message-ID: <951210154323_129779107@emout05.mail.aol.com>
To: SGranth@aol.com, gerry@cs.tamu.edu
cc: bruninga@nadn.navy.mil, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        regional_freq@tapr.org, FCorsanos@aol.com, DBILL@uic.edu,
        coordinator@cs.tamu.edu, BOB@grayfox.svs.com
Subject: Re: APRS Frequencies? (UHF mobiles seeing mobiles??)

In a message dated 95-12-09 10:10:12 EST, SGranth writes:

<< There are lots of good and practical reasons for split frequency
operations, and you don't necessarily need to transmit and receive
simultaneously on both frequencies to gain the benefits. >>

  Agreed, I was responding to one who was proposing in-band, simultaneous
duplexing as a cure for the 'hidden transmitter' theme. And indeed while the
repeater CAN hear both users, they can't hear each other, and it can't
anticipate when either will transmit, whereas in voice there is less
likelihood of collisions due to a listener being able to anticipate to some
appreciable degree whether a response to the last transmission is
forthcoming, unless of course you are unfortunate enough to have stumbled
upon those that just HAVE to get the last word in, hi.
  I was just saying that the APPARENT gain of 40 to 80% throughput is not
that great when considering that 100% more frequencies are involved.

From 73303.3537@compuserve.com Mon Dec 11 14:56:02 1995
Received: from dub-img-2.compuserve.com (dub-img-2.compuserve.com [198.4.9.2]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id OAA04525 for <regional_freq@tapr.org>;
Mon, 11 Dec 1995 14:55:57 -0600 (CST)
Received: by dub-img-2.compuserve.com (8.6.10/5.950515)
     id OAA21063; Mon, 11 Dec 1995 14:18:27 -0500
Date: 11 Dec 95 13:35:27 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: IAFC (fwd)
Message-ID: <951211183527_73303.3537_FHM51-3@CompuServe.COM>

---------- Forwarded Message ----------

From: Gerald J Creager, INTERNET:gerry@cs.tamu.edu
TO: (unknown), INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/9/95 9:15 PM

RE: IAFC (fwd)

Sender: gerry@cs.tamu.edu
Received: from cs.tamu.edu by dub-img-2.compuserve.com (8.6.10/5.950515)
     id VAA24455; Sat, 9 Dec 1995 21:59:38 -0500
Received: from solar.cs.tamu.edu (2961@solar.cs.tamu.edu [128.194.132.1]) by
cs.tamu.edu (8.6.10/8.6.4) with ESMTP id UAA10235 for <coordinator>; Sat, 9 Dec
1995 20:58:32 -0600
From: Gerald J Creager <gerry@cs.tamu.edu>
Received: (gerry@localhost) by solar.cs.tamu.edu (8.6.10/8.6.4) id UAA05722 for
coordinator; Sat, 9 Dec 1995 20:58:25 -0600
Message-Id: <199512100258.UAA05722@solar.cs.tamu.edu>
Subject: IAFC (fwd)
To: coordinator@cs.tamu.edu
Date: Sat, 9 Dec 1995 20:58:25 -0600 (CST)
X-Mailer: ELM [version 2.4 PL24]
Content-Type: text
Content-Length: 5410

This just in from the AMSAT-BB list. Since there is an OFFICIAL IARU
Frequency Coordinator (and Graham is decent folks) I thought we might want to
recognize him...

73, gerry n5jxs

============================== Cut Here ==============================
Hans van de Groenendaal SA AMSAT sez:
> From listmaint@amsat.org Sat Dec 9 17:40:59 1995
> Date: Sat, 09 Dec 1995 23:44:53 +0200
> From: Hans van de Groenendaal SA AMSAT <AMSAT@uctvms.uct.ac.za>
> Subject: IAFC
> To: amsat-bb@amsat.org
> Message-id: <01HYMEJ57PUGAC3XRC@uctvms.uct.ac.za>
> MIME-version: 1.0
> Content-type: TEXT/PLAIN; CHARSET=US-ASCII
> Content-transfer-encoding: 7BIT
>
> Dear Friends
>
> It gives me great pleasure to announce the appointment of Graham Ratcliff
> VK5AGR as IARU AMSAT Frequency Coordinator. The appoint was made in
> consultation with the international AMSAT groups.
> I would like to express my thanks to the other persons who were nominated for
> their willingness to take on the job. It is always difficult to select one
> person from a number who are all competant. I will be in touch with each
> person to seek their support for another of other tasks that are required to
be
> performed.
>
> Here follows the official press release for publication in jourbals and on
> bulletins.
>

>   J H N VAN DE GROENENDAAL

>   IARU SATELLITE ADVISER
>   IARU REGION ONE EXECUTIVE COMMITTEE MEMBER
>   Postal address: P.O.Box 1842, Hillcrest 3650
>   TEL: +27 31 765-6334 FAX: +27 31 765-6456
>   INTERNET "AMSAT@UCTVAX.UCT.AC.ZA"
>
>
>
>   GRAHAM RATCLIFF VK5AGR APPOINTED AS
>   IARU AMSAT FREQUENCY COORDINATOR
>
>
>
> Hans van de Groenendaal ZS5AKV has appointed Graham Ratcliff
> VK5AGR as the IARU AMSAT Frequency Coordinator (IAFC). Graham was
> selected from a number of nominations made by international AMSAT
> Groups for his long association with the Amateur Satellite
> programme and his excellent performance as a ground command
> station controller for AMSAT OSCAR 13.
>
> A native of Australia, Graham is a Medical Technologist employed
> by the Women's and Childrens' Hospital where he is Laboratory
> Manager for the Department of Chemical Pathology and also
> responsible for all departmental computing.
>
> He became a radio amateur in 1978 with a limted licence (VHF
> only) and commenced Amateur Satellite activities on AMSAT-OSCAR-7
> and 8 using the mode A, B and J transponders. The following year
> he was granted a novice licence (limited HF only) and awarded the
> 'OSCAR Satellite Communications Achievement Recognition Award'.
>
> In 1980 he obtained a full licence and callsign VK5AGR. In that
> year the 'Satellite DX Achievement Award' was bestowed on him.
> In 1981 he became Divisional Councillor/Education Officer for the
> South Australian Division of the Wireless Institute of Australia
> and in 1982 was elected as Divisional Councillor/Treasurer for
> the South Australian Division and in 1984 became Federal
> Councillor and Vice President. He held several other position in
> the Institute till 1986 when he resigned to focus all his
> attention on Amateur Satellite Service.
>
> With the launch of UoSAT-OSCAR-9 Graham started actively
> collecting satellite telemetry and using it for attitude
> determination. At that time he was also very active on the
> Russian mode A satellites.
>
> With the launch of AMSAT-OSCAR-10 he started actively monitoring
> the 400 baud PSK telemetry and using it for attitude
> determination and monitoring spacecraft health.
>
> In 1984 Dr Karl Meinzer, DJ4ZC invited Graham to train as a
> Command Station for Phase 3C (AMSAT-OSCAR-13) and Ian Ashley,
> ZL1AOX was given the task of providing the preliminary training.
>

>
>
>
> In May 1985 he attended a Command Station training session held
> in Boulder, Colorado during Phase 3C's thermal-vacuum testing.
> On his return he spent until the end of that year commanding
> AO-10 when required and was heavily involved in attempts to
> recover AMSAT-OSCAR-10 when its onboard computer failed at the
> end of the year.
>
> In 1987 Graham was invited by the University of Surrey to provide
> an Australian Gateway for the UoSAT-OSCAR-11 Digital
> Communications Experiment.
>
> With the AMSAT-OSCAR-13 launch on 15 June 1988 Graham along with
> other Command Stations DJ4ZC, DB2OS and ZL1AOX provided
> satellite ranging data for orbital element determination.
>
> In 1992 he was involved in the formation of the Australian
> Amateur Space Engineering Society and its proposal to build an
> Amateur Satellite in Australia. He is involved in the Space
> Shuttle Amateur Radio Experiment (SAREX) as a relay station and
> is responsible for setting up a network of 3 Australian stations
> to maximise contacts via phone patch for school contacts.
>
> Graham is also committed to supporting the Phase 3D Project as
> a Command Station which has involved the encouragement and
> training of other prospective Command Stations.
>
> He is available on Email :gratclif@wattle.itd.adelaide.edu.au.
> His mailing address is:
>
>   9 Homer Road
>   CLARENCE PARK
>   SOUTH AUSTRALIA 5034
>
> ends.
>

From cberg@grayfox.svs.com Wed Dec 13 09:18:08 1995
Received: from relay7.UU.NET (relay7.UU.NET [192.48.96.17]) by sys1.tapr.org
(8.7.2/8.7.2) with ESMTP id JAA09746 for <regional_freq@tapr.org>; Wed, 13 Dec
1995 09:18:06 -0600 (CST)
Received: from grayfox.svs.com by relay7.UU.NET with SMTP
     id QQztyj26887; Wed, 13 Dec 1995 10:18:02 -0500 (EST)
Received: from napcom.svs.com by grayfox.svs.com (5.x/SMI-SVR4)
     id AA12656; Wed, 13 Dec 1995 09:17:47 -0600
Date: Wed, 13 Dec 95 15:03:01 PST
From: Carl Bergstedt <cberg@grayfox.svs.com>
Subject: ARRL RD Packet Listings
To: regional_freq@tapr.org
X-Mailer: Chameleon ENGP1, TCP/IP for Windows, NetManage Inc.
Message-Id: <Chameleon.951213150319.cberg@napcom.svs.com>

Mime-Version: 1.0
Content-Type: MULTIPART/MIXED;
BOUNDARY="napcom.svs.com:818895800:1184825434:283592739:1907228672"

--napcom.svs.com:818895800:1184825434:283592739:1907228672
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hello to all and Happy Holidays,

I've just finished turning in the listings for Illinois to the ARRL. Please review the attached file and let me know what you think of my comments for an expanded set of notes for the Packet Listing section of the RD.

73, Carl K9VXW

--napcom.svs.com:818895800:1184825434:283592739:1907228672
Content-Type: APPLICATION/OCTET-STREAM; SIZEONDISK=1430; NAME="NATPAK1.NOT"
Content-Transfer-Encoding: BASE64
Content-Description: NATPAK1.NOT

DQogICAgVG8gYWxsIHJlY2lwaWVudHMgb2YgdGhlIHJlbWFpbGVyOg0KDQog
ICAgQXMgYSBtZW1iZXIgb2YgSByZWdpb25hbCBwYWNrZXQgZnJlcXVlbmN5
IGNvb3JkaW5hdGlvbiBncm91cCwgSSBoYXZlDQogICAgYmVlbiBzZW5kaW5n
IHBhY2tldCBsaXN0aW5ncyB0byB0aGUgQVJSTCBmb3IgcHVibGlzaGluZyBp
biB0aGUgUmVwZWF0ZXINCiAgICBEaXJlY3RvcnkuDQoNCiAgICBJIGhhdmUg
Zm91bmQgdGhhdCB0aGUgbm90ZSBsaXN0aW5ncyBpbiB0aGUgQVJSTCBSZXBl
YXRlciBEaXJlY3RvcnkgYXJlDQogICAgaW5hZGVxdWF0ZSBmb3IgbGlzdGlu
ZyB0aGUgZmVhdHVyZXMgb2YgcGFja2V0IG5vZGVzIGFuZCBCQlNlcy4gIEl0
DQogICAgd291bGQgYmUgZGVzaXJhYmxlIHRvIGhhdmUgYSBzZXQgb2Ygc3Rh
bmRhcmQgbm90ZXMgZm9yIHRoZSBEaXJlY3RvcnksDQogICAgc28gSSBwcm9w
b3NlIHRvIHVzZSBzb21ldGhpbmcgbGlrZSB0aGlzIGZvciBmdXR1cmUgc3Vi
bWl0dGFscyB0byB0aGUNCiAgICBBUlJMLiAgV2hhdCBkbyB5b3UgdGhpbms/
ICBDYW4gd2UgYWxsIHB1dCB0b2dldGhlciBhIHNldCBvZiBub3RlcywNCiAg
ICBiYXNlZCBvbiB3aGF0IHlvdSBoYXZlIGJlZW4gdXNpbmcgYW5kIHRoZSBs
aXN0IGJlbG93Pw0KDQogICAgbiAtIE5vZGUsIEFYLjI1IG9ubHkNCiAgICBt
IC0gRnVsbCBmb3J3YXJkaW5nIEJCUw0KICAgIGQgLSBkaWdpcGVhdGVyDQog
ICAgZyAtIGdhdGV3YXkNCiAgICBXWCAtIFdlYXRoZXIgSW5mbyBub2RlDQog
ICAgSyAtIEtub2RlDQogICAgQ1MgLSBDYWxsc2lnbiBTZXJ2ZXINCiAgICBE
QlMgLSBEYXRhYmFzZSBTZXJ2ZXINCiAgICBETlMgLSBEb21haW4gTmFtZXNl
cnZlcg0KICAgIENOICAtIENvbmZlcmVuY2UgTm9kZQ0KICAgIElOZyAtIElu
dGVybmV0IGdhdGV3YXkNCiAgICBJUG4gLU5vZGUgSVAgYW5kIEFYMjUNCiAg
ICBEWEwgLSBEWCBQYWNrZXRDbHVzdGVyIExpbmsNCiAgICBEWFUgLSBEWCBQ
YWNrZXQgQ2x1c3RlciBVc2VyIHBvcnQNCiAgICBSICAgLSBSb3NlIHN3aXRj
aA0KICAgIFRFWCAtIFRleG5ldCBub2RlDQoNCiAgICBBbHNvLCB3ZSBub3cg
aGF2ZSBubyB3YXkgb2YgZGVzaWduYXRpbmcgYmF1ZCByYXRlIG9mIGJvdGgg
dXNlciBhbmQNCiAgICBuZXR3b3JrIGxpbmsgbm9kZXMuIEhvdyBhYm91dCB0
aGUgZm9sbG93aW5nPw0KDQogICAgICAgICAgICBTaW5jZSAxMjAwIGJhdWQgbm9k
ZXMgYXJlIHRoZSB1c3VhbCCwgdGhpcyBjb3VsZCBiZQ0KICAgICAgICAg
IGRlZmF1bHQuICBPdGhlciBiYXVkIHJhdGVzIGNvdWxkIGJlIGRlc2lnbmF0
ZWQNCiAgICAgICAgICAgIGJ5IGEgMiwgNCwgOSwgMTksIDU2IHNpZ25pZnlpbmcg
Mi40LCA0LjgsIDkuNiAxOS4yDQogICAgICAgICAgICBhbmQgNTYgS0JkIHJlc3Bl
Y3RpdmVseS4NCg0KICAgIDczLCBDYXJsIEs5VlhXDQoNCho=

--napcom.svs.com:818895800:1184825434:283592739:1907228672--

From 73303.3537@compuserve.com Tue Dec 19 13:59:15 1995
Received: from arl-img-7.compuserve.com (arl-img-7.compuserve.com [198.4.7.7]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id NAA00589 for <regional_freq@tapr.org>;
Tue, 19 Dec 1995 13:59:09 -0600 (CST)
Received: by arl-img-7.compuserve.com (8.6.10/5.950515)
     id OAA14838; Tue, 19 Dec 1995 14:54:51 -0500
Date: 19 Dec 95 14:49:24 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: Bob Hajek <f#hajek@ccmail.ceco.com>, Nels Harvey <nhar@execpc.com>,
        Dick Islely <dick@mcs.com>
Cc: Digital Coordinators <regional_freq@tapr.org>
Subject: Packet-Mode channel spacing practicality...
Message-ID: <951219194924_73303.3537_FHM74-1@CompuServe.COM>

---------- Forwarded Message ----------

From: INTERNET:KK9T@aol.com, INTERNET:KK9T@aol.com
TO: (unknown), INTERNET:BOB@NPR.LEGENT.COM
     Mark J. Thompson, 73303,3537
     Carl Bergstedt, INTERNET:CBERG@GRAYFOX.SVS.COM
     Bill Davidson, INTERNET:DBILL@UIC.EDU
     Frank Corsanos, INTERNET:FCORSANOS@AOL.COM
     (unknown), INTERNET:ARUTZ@ADSNET.COM
     (unknown), INTERNET:DDALEY@ADSNET.COM
     (unknown), INTERNET:JES@FWI.COM
     (unknown), INTERNET:IBFUN@AOL.COM
     (unknown), INTERNET:KE9LZ@NETNET.NET
CC: Bill, WA8SHU, INTERNET:WA8HSU@AOL.COM
     Steve, WB9SHY, INTERNET:WB9SHY@AOL.COM
     Vince Vielhaber, INTERNET:VEV@CONCH.AA.MSEN.COM
     (unknown), INTERNET:2006784@MCIMAIL.COM
     INTERNET:SGranth@aol.com, INTERNET:SGRANTH@AOL.COM
     (unknown), INTERNET:3904185@MCIMAIL.COM
     N9UNR, INTERNET:N9UNR@EXECPC.COM
     Jeremy Ruck, INTERNET:JRUCK@HEARTLAND.BRADLEY.EDU
     (unknown), INTERNET:JEFF.ETV@WKU.EDU
     Jim Fonte, INTERNET:KK9T@AOL.COM
     Whit Brown, INTERNET:WHITBROWN@AOL.COM
DATE: 12/18/95 11:16 AM

RE: Packet-Mode channel spacing practicality...

Sender: kk9t@aol.com
Received: from emout05.mail.aol.com (emout05.mail.aol.com [198.81.10.37]) by
arl-img-3.compuserve.com (8.6.10/5.950515)
     id LAA09953; Mon, 18 Dec 1995 11:00:51 -0500
From: <KK9T@aol.com>
Received: by emout05.mail.aol.com (8.6.12/8.6.12) id KAA19460; Mon, 18 Dec 1995
10:55:32 -0500
Date: Mon, 18 Dec 1995 10:55:32 -0500
Message-ID: <951218105531_75255342@emout05.mail.aol.com>

To: bob@npr.legent.com, 73303.3537@compuserve.com, cberg@grayfox.svs.com,
        dbill@uic.edu, FCorsanos@aol.com, arutz@adsnet.com, ddaley@adsnet.com,
        jes@fwi.com, IBFUN@aol.com, ke9lz@netnet.net
cc: WA8HSU@aol.com, WB9SHY@aol.com, vev@conch.aa.msen.com, 2006784@mcimail.com,
        SGranth@aol.com, 3904185@mcimail.com, n9unr@execpc.com,
        jruck@heartland.bradley.edu, JEFF.ETV@wku.edu, KK9T@aol.com,
        WhitBrown@aol.com
Subject: Packet-Mode channel spacing practicality...

Gents,

Well, there has been some very lively conversation about the "National" APRS frequency, and other packet issues, that, for the most part, should be of information interest of a cooperative nature to the FM-repeater/voice-relay Coordinator.

The issue of technical-absolutes for a given transmission-process are, to me, of paramount importance for the band-planning process, but the "nit-picky" arguments that abound, relating to center-channel location, and that 1200/2400 bps. speeds must eventually yeild to 9600 bps speed, should be put to rest by some blatant common sense.

Since the FCC Rules & Regs state that the "data-type" transmission "speed-limit" shall be no-more-than 9600 bps. on the 6m & 2m bands, and no-more-than 20 kHz. in total bandwidth, why don't the Packet-Coordinators & Planners consider 20 kHz. channel-spacing for all its "up-to 9600 bps." terrestrial-packet-channels...to accomodate present-and-future bandwidth and transmission-speed needs. For example, the APRS "channel" could be moved to 145.7850 MHz., allowing for a 5 kHz. guard-band (deadspace) wall protecting the edge of the 145.8000 -to- 146.0000 MHz. satellite subband, and NO guardband between future 9600 bps ----- OR, explained another way, to the "left" of 145.785 MHz., (with no guard-band, as presently utilized) for up-to 9600 bps. packet-transmissions as shown - as well as protecting OTHER MODES and processes:

145.8000 - satellite subband protected
**5 kHz. guardband
145.7850(pkt) - APRS
145.7650(pkt) - 145.7450(pkt) - 145.7250(pkt) - 145.7050(pkt) - 145.6850(pkt) - 145.6650(pkt) - 145.6450(pkt) - 145.6250(pkt) - 145.6050(pkt) - 145.5850(pkt) - 145.5650(pkt)
**5 kHz. guardband
145.5500 - shuttle downlink-frequency protected
**5 kHz. guardband
145.5350(pkt) - 145.5150(pkt)
145.4900 - last repeater subband output
145.1100 - first repeater subband input
145.0900(pkt) - 145.0700(pkt) - 145.0500(pkt) - 145.0300(pkt) - 145.0100(pkt)

144.9900(shared: shuttle-voice&pkt uplink during flights, else time terrestrial)
144.9700(shared: shuttle-voice&pkt uplink during flights, else time terrestrial)
144.9500(shared: shuttle-voice&pkt uplink during flights, else time

terrestrial)
144.9300(shared: shuttle-voice&pkt uplink during flights, else time
terrestrial)
144.9100(shared: shuttle voice&pkt uplink during flights, else time
terrestrial)

Is any of this thought of any value to anyone??

...Jim, KK9T

From 73303.3537@compuserve.com Thu Dec 21 17:59:21 1995
Received: from dub-img-7.compuserve.com (dub-img-7.compuserve.com [198.4.9.8]) by
sys1.tapr.org (8.7.2/8.7.2) with SMTP id RAA08199 for <regional_freq@tapr.org>;
Thu, 21 Dec 1995 17:59:15 -0600 (CST)
Received: by dub-img-7.compuserve.com (8.6.10/5.950515)
     id SAA07876; Thu, 21 Dec 1995 18:58:43 -0500
Date: 21 Dec 95 18:56:13 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: Fwd: ATV Bandwidth
Message-ID: <951221235613_73303.3537_FHM28-2@CompuServe.COM>

---------- Forwarded Message ----------

From: INTERNET:KK9T@aol.com, INTERNET:KK9T@aol.com
TO: Bill, WA8SHU, INTERNET:WA8HSU@AOL.COM
     Steve, WB9SHY, INTERNET:WB9SHY@AOL.COM
     Vince Vielhaber, INTERNET:VEV@CONCH.AA.MSEN.COM
     (unknown), INTERNET:ARUTZ@ADSNET.COM
     (unknown), INTERNET:JEFF.ETV@WKU.EDU
     (unknown), INTERNET:MIKEM@MRE.COM
     (unknown), INTERNET:BOB@NPR.LEGENT.COM
     Mark J. Thompson, 73303,3537
     Carl Bergstedt, INTERNET:CBERG@GRAYFOX.SVS.COM
     Bill Davidson, INTERNET:DBILL@UIC.EDU
     Frank Corsanos, INTERNET:FCORSANOS@AOL.COM
     (unknown), INTERNET:DDALEY@ADSNET.COM
     (unknown), INTERNET:JES@FWI.COM
     (unknown), INTERNET:IBFUN@AOL.COM
     (unknown), INTERNET:KE9LZ@NETNET.NET
     N9UNR, INTERNET:N9UNR@EXECPC.COM
     Jeremy Ruck, INTERNET:JRUCK@HEARTLAND.BRADLEY.EDU
CC: Jim Fonte, INTERNET:KK9T@AOL.COM
DATE: 12/21/95 6:51 PM

RE: Fwd: ATV Bandwidth

Sender: kk9t@aol.com
Received: from emout05.mail.aol.com (emout05.mail.aol.com [198.81.10.37]) by
arl-img-3.compuserve.com (8.6.10/5.950515)
     id SAA25623; Thu, 21 Dec 1995 18:39:40 -0500
From: <KK9T@aol.com>

Received: by emout05.mail.aol.com (8.6.12/8.6.12) id SAA02520; Thu, 21 Dec 1995 18:36:35 -0500
Date: Thu, 21 Dec 1995 18:36:35 -0500
Message-ID: <951221183633_9650945@emout05.mail.aol.com>
To: WA8HSU@aol.com, WB9SHY@aol.com, vev@conch.aa.msen.com, arutz@adsnet.com, JEFF.ETV@wku.edu, mikem@mre.com, bob@npr.legent.com, 73303.3537@compuserve.com, cberg@grayfox.svs.com, dbill@uic.edu, FCorsanos@aol.com, ddaley@adsnet.com, jes@fwi.com, IBFUN@aol.com, ke9lz@netnet.net, n9unr@execpc.com, jruck@heartland.bradley.edu
cc: KK9T@aol.com
Subject: Fwd: ATV Bandwidth

FYI...

Forwarded message:
From: atv-clerk@tallahassee.net
Reply-to: atv-clerk@tallahassee.net
To: KK9T@aol.com
Date: 95-12-21 16:07:30 EST

This message has been forwarded to you by the TSX-BBS mailing list manager.
Submitted-by: TOMSMB@aol.com
To send a message to this mailing list, address the message to "ATV@tallahassee.net". To remove yourself from this list, send e-mail to "listserv@tallahassee.net". Include in the body of the message the following line: "UNSUBSCRIBE ATV"

Received: by emout06.mail.aol.com (8.6.12/8.6.12) id PAA28522 for ATV@tallahassee.net; Thu, 21 Dec 1995 15:42:58 -0500
Date: Thu, 21 Dec 1995 15:42:58 -0500
From: TOMSMB@aol.com
Message-ID: <951221154256_20876377@emout06.mail.aol.com>
To: ATV@tallahassee.net
Subject: ATV Bandwidth

We hear all kinds of numbers thrown around for ATV bandwidth. Those looking for spectrum for other modes most often have a false impression if not defined correctly to them. No wonder they think we are band hogs Most I have talked to think in terms of FM where the spectrum power density is quite high over the whole bandwidth - not so with ATV. Bandwidth really depends on what one is talking about, so here are some definitions.

Occupied Bandwidth: Per FCC Rules 97.3(a)(8) it is the width of a frequency band outside of which the mean power of the transmitted signal is at least 26 dB below the mean power of the transmitted signal within the band. ATV luminance video (the black and white part) is actually less than 2 MHz.

Carson's Rule for FM Occupied Bandwidth: 2 times the deviation plus 2 times the highest modulating frequency. i.e. 2x 5 kHz deviation plus 2x 3 kHz voice or digital equals 16 kHz.

ATV Transmitted Bandwidth: Down greater than 40 dBc +/- 1 MHz of the video carrier (Television Engineering Handbook - 1992 - Benson - Fig. 5-11) plus color subcarrier at 3.58 MHz Down greater than 22 dBc (all red screen) and sound subcarrier 4.5 MHz greater than 15 dBc. Note this is true for both DSB and VSB. VSB has lower color and sound subcarriers attenuated additionally by the VSB filter response curve starting at -1.25 MHz below the video carrier.

Standard TV channel bandwidth: 6 MHz, video carrier 1.25 MHz up from lower edge.

While the transmitted video is many tens of dB below the peak envelope power (sync tip) and random (not unlike spread spectrum) the TV receiver IF and detector bandwidth must be almost flat across the whole 4.2 MHz to maintain the transmitted relative video to sync ratio. Normal instantaneous luminance video response bandwidth: 3 MHz.
Highest instantaneous video response bandwidth including color: 4.2 MHz

This is why most ATV stations receive more interference than transmit it.
 Most narrow band modes will never notice an ATV transmitter on the air if they are operating between 1 and 3.4 MHz or 3.8 and 4.3 MHz from a video carrier. The actual spectrum power density is about the same as license free FCC part 15 field strength with a 10 Watt ATV transmitter in these 2.4 and .5 MHz segments within the ATV channel. However, any narrow band transmissions greater than one microvolt within the 6 MHz channel can interfere with the picture.

De Tom, W6ORG

Feel free to use any of my Email ATV notes in your local ATV news letters if you like as long as they are unedited and my call signed at the end as the source. I appreciate any constructive feedback or questions of general interest for future notes.

From 73303.3537@compuserve.com Fri Dec 29 18:39:15 1995
Received: from dub-img-3.compuserve.com (dub-img-3.compuserve.com [198.4.9.3]) by sys1.tapr.org (8.7.2/8.7.2) with SMTP id SAA06732 for <regional_freq@tapr.org>; Fri, 29 Dec 1995 18:39:10 -0600 (CST)
Received: by dub-img-3.compuserve.com (8.6.10/5.950515)
     id TAA15397; Fri, 29 Dec 1995 19:38:35 -0500
Date: 29 Dec 95 19:36:09 EST
From: "Mark J. Thompson" <73303.3537@compuserve.com>
To: BlindCopyReceiver:;;@compuserve.com
Subject: [APRSSIG:5577] Re: 6M APRS Activiity...
Message-ID: <951230003609_73303.3537_FHM56-2@CompuServe.COM>

---------- Forwarded Message ----------

From: "David W. Barrow III", INTERNET:dbarrow@omnifest.uwm.edu

TO: Coordinator's Remailer, INTERNET:COORDINATOR@CS.TAMU.EDU
DATE: 12/29/95 1:59 PM

RE: [APRSSIG:5577] Re: 6M APRS Activiity...

Sender: dbarrow@omnifest.uwm.edu
Received: from cs.tamu.edu (clavin.cs.tamu.edu [128.194.130.106]) by arl-img-5.compuserve.com (8.6.10/5.950515)
     id NAA27695; Fri, 29 Dec 1995 13:46:58 -0500
Received: from uwm.edu (uwm.edu [129.89.6.2]) by cs.tamu.edu (8.6.10/8.6.4) with ESMTP id MAA29676 for <coordinator@cs.tamu.edu>; Fri, 29 Dec 1995 12:45:03 -0600
Received: from omnifest.uwm.edu (omnifest.uwm.edu [129.89.70.58]) by uwm.edu (8.7.1/8.6.9) with SMTP id MAA10211 for <coordinator@cs.tamu.edu>; Fri, 29 Dec 1995 12:45:43 -0600 (CST)
Received: by omnifest.uwm.edu; (5.65/1.1.8.2/17Sep94-0940PM)
     id AA06392; Fri, 29 Dec 1995 12:45:42 -0600
Date: Fri, 29 Dec 1995 12:45:42 -0600
From: "David W. Barrow III" <dbarrow@omnifest.uwm.edu>
Message-Id: <9512291845.AA06392@omnifest.uwm.edu>
To: coordinator@cs.tamu.edu
Subject: [APRSSIG:5577] Re: 6M APRS Activiity...

FORWARDED FROM: /mail/db/dbarrow(#8054) From:benws5r@aol.com
Whatever we do we need to decide what frequency we are going to use. I have seen reports of 6m activity on 50.620 and 50.610. Have been running 6m APRS during the E-skip of the last few days and have seen nothing, although I did connect with a node in Wisconson from NW Texas and got into there 2m net and played around, so it can work.

I'll probably be flamed again, but oh well won't be the last time. What about a 2m and 6m weak signal (aka SSB) freq, It would be nice to have one to try for periods of E-skip, meteor showers, etc. And it might turn out to be a great beacon system!

On another note has anyone done or thought of tying a 6m rig in with a wide? I mean haveing a 2m rig and 6m rig running off of one single port TNC, so it will basically act as a dual freq node? I don't know if this will work or not, but any ideas are welcome.

Go ahead and flame and whine, caise I wear an asbestos suit all the time! I'm also qualified and licensed to remove it.

Ben WS5R at What Lakes? Amarillo TX benws5r@arn.net

-----FORWARDER'S COMMENTS:
GENTLEMEN -

        As you can see - WE need to give a little guidance here!

        Could we PLEASE get the Presidents of the various coordination bodies to appoint a committee - QUICKLY!!!!

If WE can't solve this kind of problem - I have little hope...

Dave Barrow, N9UNR
FC-WI WAR-MACC
n9unr@execpc.com

From wd6cmu@netcom.com Sun Dec 31 15:00:17 1995
Received: from netcom20.netcom.com (wd6cmu@netcom20.netcom.com [192.100.81.133])
by sys1.tapr.org (8.7.2/8.7.2) with SMTP id PAA05398 for <regional_freq@tapr.org>;
Sun, 31 Dec 1995 15:00:12 -0600 (CST)
Received: by netcom20.netcom.com (8.6.12/Netcom)
     id MAA01042; Sun, 31 Dec 1995 12:56:57 -0800
From: wd6cmu@netcom.com (Eric Williams)
Message-Id: <199512312056.MAA01042@netcom20.netcom.com>
Subject: intro
To: regional_freq@tapr.org
Date: Sun, 31 Dec 1995 12:56:57 -0800 (PST)
X-Mailer: ELM [version 2.4 PL23]
MIME-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit

I just added myself to the list and thought I'd introduce myself. I am
vice-president and frequency coordinator for the Northern California
Packet Association. NCPA is an education and coordination organization
for the northern part of the state established in 1987. I've placed our
current bandplan in URL ftp://ftp.netcom.com/pub/wd/wd6cmu/ncpa_bandplan
if anyone wants to refer to it.
--
Eric Williams | wd6cmu@netcom.com | WD6CMU@WD6CMU.#NOCAL.CA.USA.NOAM